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Nos. I. to VI.—1857.

“It will flourish, if naturalists, chemists, antiquaries, philologers, and men of science, in different parts of *Asia*, will commit their observations to writing, and send them to the Asiatic Society at Calcutta. It will languish if such communications shall be long intermitted; and it will die away, if they shall entirely cease.”
—SIR WM. JONES.

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1858.

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ASIATIC SOCIETY.

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No. VI. 1857.

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*Comparative Vocabulary of the Languages of the broken Tribes of
Népál.—By B. H. HODGSON, Esq., B. C. S.*

Continued from No. V.

VAYU DECLENSION.

1st of Pronouns.

Personals. Singular.

| | | |
|--------------|------------------------------|--------------------------|
| N. | I, Gó. | |
| G. | Of me, Ang, conjunct, = my.* | Angmu, disjunct, = mine. |
| D. | to me | } Gó. No sign. |
| Ac. | me | |
| L. | { In, at into, me } | Ang be. |
| Ab. | from me, Ang khen. | |
| Ins. | by me, G'há (go-ha). | |
| Soc. | with me, Angnung. | |
| Priv. | without me, Ang má nosa.† | |
| <i>Dual.</i> | | |
| N. | Gó nakpu, m. f. | Gó nárgung, n.‡ |

* Ang the constructive form of gó, means my, before a substantive or qualitative used substantively, but before a transitive participle it means me or of me, e. g. ang tovi, who beats me, or the beater of me. Yet ang topchyáng is my club, topchyáng being the neuter form of tovi, used as a noun.

† There is no proper privative particle, nor consequently, case. Aug má nosa or gó má nosa = if I be not, I not being, or my not being (present). In Khas, man na bhái: in Newari, ji ma dusa.

‡ Nakpo, náýung is the 2nd numeral which is gendered when used apart, but doubtfully I think, and still more so when used as a dual sign. I find, however, nakpu, nangmi, nayung for the three genders. Also hic et hæc nakpu.

- G. { Angchi, excl. Ungchi, incl. *Conjunct.*
 { Angchimu, excl. Ungchimu, incl. *Disjunct.*
 D. Ac. Gonakpu, m. f. Gonargung, n.
 I. Angchi be, excl. Ungchi be, incl.
 Ab. Angchi khen, excl. Ungchi khen, incl.
 Ins. Gó nakpu ha or Ghá nakpu ha.
 Soc. Angchi nung, excl. Ungchi nung, incl.

Plural.

- N. Gó kháta.
 G. { Angki, excl. Ungki, incl. *Conjunct.*
 { Angkimu, excl. Ungkimu, incl. *Disjunct.*
 D. Ac. Gó kháta. No sign.
 L. Angki be, excl. Ungki be, incl.
 Ab. Angki khen, excl. Ungki khen, incl.
 Ins. Go khata ha or Gha khata ha.
 Soc. Angkinung, excl. Ungkinung, incl.

Second person.

- N. Gon.
 G. Ung, conjunct = Thy. Ungmu, disjunct. = Thine.
 D. Ac. Gon. No sign.
 L. Ung be.
 Ab. Ung khen.
 Ins. Gon ha.
 S. Ung nung.

Dual.

- N. Gonchhe.
 G. Ungchhi, conj. Ungchhimu, disj.
 D. Ac. Gonchhe. No sign.
 L. Ungchhi be.
 Ab. Ungchhi khen.
 Ins. Gonchhe ha.
 Soc. Ungchhi nung.

Third Personal.

- N. Wathi. All 3 genders.
 G. Wathim, conj. Wathimmu, disj.
 D. Ac. Wathi. No sign.
 L. Wathim be.
 Ab. Wathim khen.
 Ins. Wathi ha.
 Soc. Wathim nung.

Dual.

- N. Wathi nakpu, m. Wathi nangmi, f. Wathi nayung, n. c. See note
 aforegone.
 G. { Wathim nakpum, conj. } m.
 { Wathim nakpumu, disj. }
 { Wathim nangmim, conj. } f.
 { Wathim nangmimu, disj. }
 { Wathim nayung, conj. } n. and c.
 { Wathim nayungmu, disj. }
 D. Ac. Wathi nakpu, m. Wathi nangmi, f. Wathi nayung, n. and c.
 Loc. Wathim nakpumbe, m. Wathim nangmi be, f. Wathim nayung be
 n. and c.

- Ab. Wathim nakpum khen, m. Wathim nangmim khen, f. Wathim nayung khen, n. and c.
 Ins. Wathi nakpu ha, m. Wathi nangmi ha, f. Wathi nayung ha, n. and f.
 Soc. Wathim nakpum nung, m. Wathim nangmim nung, f. Wathim nayung nung, n. and c.

Plural.

- N. Wathi kháta, m. f. n.
 G. Wathim khatam, conj. Wathim khatamu, disj.
 D. Ac. Wathi khata.
 Loc. Wathim khata be.
 Ab. Wathim khata khen.
 Ins. Wathi khata ha.
 Soc. Wathim khata nung.

Near demonstrative.

- N. I. All three genders.
 G. Inung, conj. Inungmu, disj.
 D. Ac. I. No sign.
 Loc. Inung be.
 Ab. Inung khen.
 Ins. I'ha.
 Soc. Inung nung.

Dual.

- N. Inakpu, m. Inangmi, f. Inayung, n. and c.
 G.

| | | |
|------------------|------------------|------|
| { | Inakpum, conj. | } m. |
| | Inakpummu, disj. | |
| | Inangmin, conj. | } f. |
| | Inangmimu, disj. | |
| | Inayung, conj. | |
| Inayungmu, disj. | | |

 D. Ac. Inakpu, m. Inangmi, f. Inayung, n.
 L. Inung nakpumbe, m. Inung nangmimbe, f. Inung nayung be, n.
 Ab. Inung nakpum khen, m. Inung nangmim khen, f. Inung uayung khen, n. c.
 Ins. Inak poha, m. Inangmi ha, f. Inayung ha, n. and c.
 Soc. Inung nakpum nung, m. Inung nangmim nung, f. Inung nayung nung, n. c.

Plural.

- N. I'khata. All genders.
 G. Inung khatam, conj. Inung khatamu, disj.
 D. Ac. I'khata.
 Loc. Inung khata be.
 Abl. Inung khata khen.
 Ins. I'khata há.
 Soc. Inung khata nung.

Remote demonstrative.

- N. Mí All genders.
 G. Mínung, conj. Mínungmu, disj. &c. as in the last.

Interrogative and distributive pronoun, m. f. Who? Any one. Some person. Su or Suna. Subs. and Adj.

- N. Sú. Suna.
 G. Súm. Súnám, conj. Sumu. Sunamu, disj.
 D. Ac. Sú. Suna.
 Loc. Súbe, Sunabe.
 Abl. Súkhen, Sunakhen.
 Ins. Suha, Sunaha.
 Soc. Sunung, Sunaunung.

Dual.

- N. Su or Suna nakpu, m. Su or Suna nangmi, f. &c. as before.

Plural.

- N. Sú or Sunakhata, &c. as before.

Interrogative and distributive pronoun, n. What? Any or something.

- N. Mische.

- G. Mischem, conj. Mischemu, disj. &c.

Dual.

- N. Mische nayung, &c.

Plural.

- N. Mische khata, &c.

Relative, interrogative and distributive pronoun and pronominal adjective which, what, who.

- N. Hánung, m. f. n.

- G. Hánung,* conj. Hánungmu, disj. &c.

Dual.

- N. Hanung nakpo, m. Hanung nangmi, f. Hanung nayung, n.

- | | | | | | | |
|------------------|---|--------------------|---|-------|---|-------|
| G. | { | Hanung nakpum, m. | } | conj. | | |
| | | Hanung nangmim, f. | | | | |
| | | Hanung nayung, n. | | | | |
| | | Hanung nakpumu, | | | } | disj. |
| | | Hanung nangmimu, | | | | |
| Hanung nayungmu, | | | | | | |

And so on, like wathi, except that hanung has no inflexional shape (itself being inflexional). Hence it has hanung nakpo and hanung khata, where wathi has wathna nakpo and wathim khata. And this is likewise the case with the possessive pronouns, all of which, though but genitives of the personals, are regarded as independent and declined like the personals.

Thus also are declined the interrogative and relative of number and quantity, with its correlative, or háthá, mítha = how much or many? and so much or many. Thus also the adverbs of time and place, Inhe, here, Wathe and Mínhe, there. Hanhe, where? Ithe or Umbe or Abo, now; Mítthe, then; Hákhhe, when? with all the rest of the adverbs that are not gerunds.

Observe that these adverbs are derived from the demonstratives in the locative case. But, where, Í, Mí and Wathi, the pronouns take the inflexional m, or nung, (whence come inungmu and wathimmu = his) the corresponding adverbs have no inflexional mark, but remain immutable, only adding the declensional signs m or mu, be, khen, &c.; and thus we have ithamu and inhemu, of here, and ithakhen, inhekhen, from here, and abomu, of now, abokhen from now, not abommu, abomkhen.

Observe also that the conjunct possessives (genitives of the personals) are indeclinable, but that the disjunct are declinable like the personals. Aug, ung, wathim, inung, miung, are inflexional forms merely, therefore angkhen = from me. But angmu is a possessive pronoun proper, whence angmukhen-be-ha = from mine, in mine, by mine.

* The conjunct form of the genitive of this pronoun has no sign, being marked by position alone, as when two substantives meet is always admissible. Hánung is itself a genitive = of whom, of which, e. g. hanung got ha, of which (and which) hand. Hanungmu = whose, apart, or in reply. Hanungmu got = the hand of whom. Hanung got = which hand.

II.—DECLENSION OF NOUNS.

*Substantive.*1st.—*Substantives proper.*

Lóncho, a man, m.

| | |
|--------|--------------------------------|
| N. | Lóncho. |
| G. | Lóncho, conj.* Lónchomu, disj. |
| D. Ac. | Lóncho. |
| L. | Lónchobe. |
| Ab. | Lónchokhen. |
| Ins. | Lónchoha. |
| Soc. | Lónchonung. |

Dual.

| | |
|--------|---|
| N. | Lóncho nakpo.† |
| G. | Lóncho nak pum,‡ conj. Lóncho nak pumu, disj. |
| D. Ac. | Lóncho nakpo. |
| Loc. | Lónchonak pube. |
| Abl. | Lóncho nakpukhen. |
| Ins. | Lóncko nakpuhá. |
| Soc. | Lóncho nakpu nung. |

Plural.

| | |
|--------|--|
| N. | Lónchokhata.† |
| G. | Lónchokhatam,‡ conj. Lóncho khatamu, disj. |
| D. Ac. | Lóncho khata. |
| L. | Lóncho khabe. |
| Abl. | Lóncho khata khen. |
| Soc. | Lóncho khata nung. |

Thus also is declined the feminine noun mescho, a woman, the epicene noun singtong, mankind, and all such without reference to gender. Neuters also are similarly declined. But I add a specimen.

Sing, wood, a neuter.

| | |
|----|-------------------------------|
| N. | Sing. |
| G. | Sing, conj. Singmu, disj. &c. |

Dual.

| | |
|----|---|
| N. | Náng sing (náng is a contraction of Náyung) or Sing nayung. |
| G. | Nang sing, conj. Nang singmu, disj. &c. |

* The first of 2 substantives is by position alone a genitive, as loncho got, the man's hand. But apart, it must have the sign, as lonchomu, the man's.

† Generally in the Himalayan languages, the dual and plural signs are eschewed in regard to substantives proper except where ambiguity would arise from omitting them. In regard to appellatives and qualitives used substantively, as all may be, these signs are always annexed and also those of gender, because such words, (and pronouns of the 3rd person also, to which the same rule applies) unlike the former tell nothing of themselves on these points. Vayu, however, freely applies its dual and plural signs and its sex signs, where it has any, to all nouns and pronouns, though the structure of its verb renders such use of the dual and plural signs superfluous, e. g. béli imchimem, the sheep are sleeping. Newari, though void of such help, lacks a dual and plural of neuters.

‡ We should rather read nakpu and khata for the reason given in a prior note. Yet my informants, though they never apply the genitive to the conjunct form of this case in the singular, do so in the dual and plural.

Plural.

N. Sing khata.

G. Sing khata, conj. Sing khatamu, disj. &c.

2nd.—Participles used substantivally (Remark. When they are used adjectivally, which they all are to a great extent, they precede the noun and are immutable, like all other adjectives).

Tó'vi, he or she who beats, the beater, m. and f.

N. Tó'vi, m. f.

G. Tó'vi, conj. To'vimu, disj.

D. Ac. Tó'vi, &c.

Dual.

N. Tó'vi nakpu, m. Tó'vi nangmi, f.

G. Tó'vi nakpu, m. conj. Tó'vi nangmi, f. conj. Tó'vi nakpumu, m. disj.

Tó'vi nangmimu, f. disj. &c. as before.

Plural.

N. Tó'vi khata, m. f.

G. Tó'vi khata, conj. To'vi khatamu, disj. &c. as before.

Topchyáng, neuter of the above, what one strikes with, as club, stick, &c.

N. Topchyáng.

G. Topchyáng, conj. Topchyángmu, disj. &c.

Dual.

N. Nang topchyáng.

G. Naug topchyáng, conj. Nang topchyángmu, disj. &c.

Plural.

N. Topchyáng kháta.

G. Topchyáng khata, conj. Topchyáng khatamu, disj. &c.

So also Topta, who or what has been beaten, m. f. n. with the requisite adaptation of nakpu, nangmi or náug (náung) in the dual.

3rd.—Qualitives used substantivally, e. g. }

Khakchhing-wo, m.

Khakchhing-mi, f.

Khakchhing-mu, n. and c.

} = the black one, being or thing.

This and all the like are declined as above. And so also are the qualitives which substitute the formative "cho" for "wo" in the masculine, as Bang-cho, a mature man; Bing-cho, a handsome man, &c. The feminines of these are in "mi" as in the last. They have no neuters in this form; but they can superadd the usual m. f. n., signs, as bang-cho-wo, a mature man, bang-cho-mi, a mature woman, bang-cho-mu, a mature thing, and then of course they have the complete hic, hæc, hoc of gender.

4th.—The numerals, inclusive of the adverbial ones.

5th.—Derivative qualitives formed from abstracts, as Daksa-wo, the covetous man, Daksa-mi, the covetous woman, from Daksa, covetousness. Choti-wo, the strong man; Choti-mi, the strong woman, Choti-mu, the strong thing, from Choti, strength. Suksa-wo, the hungry man; Suksa-mi, the hungry woman, from Suksa, hunger; and all such.

6th.—Nominal as well as pronominal genitives, which, with the m or mu formative, are all treated as distinct substantives, e. g. singmumu, the wooden one. (Remark. The cacophonous iteration of the mu (though often truncated in the second syllable, singmum) owing to the coincidence of the genitival and formative signs, makes the use of such words rare when a possessive case meaning must be assigned to them. They are used, however, freely in all other cases).

7th.—Simple or compound words indicating one's country, profession or avo-

cation and the like, and which are not expressed participially.* form yet another class of substantives, as Chhugong-wo = a Bhotia, or native of Tibet; Chhugong-mi, a Bhotini or female of Tibet; Hengong-wo (m.), Hengong-mi (f.), a male and female of Nepal proper; Gyétinnamsang-wo-mi, a male and female stranger or foreigner; Rakeho-wo-mi, a male and female ploughman, Bóchhó-wo-mi, a male and female European (white-body) Gáginmulung-wo-mi, a male and female of the plains. In short, nouns of whatever sort (and the above enumeration has been made here, though not strictly german to grammar, expressly to show the various sorts of nouns and their mode of construction) and pronouns also, wherever used substantivally or disjunctly, and therefore declinable, all follow the above single form of declension. And, on the other hand every noun and pronoun when used conjunctly, that is, preceding a substantive which is thereby qualified, is always indeclinable, and, for the most part, altogether unchangeable, having no expressed grammatical affections whatever, the signs of genders being neglected in use even where they exist. Indeed qualifying and qualified words seem to be as much as possible regarded as constituting a single compound term; and, the more effectually to ensure this, one of the two elements (the one that goes first in the compound) is customarily truncated; thus rísa, a plantain, and singphum, a tree, make rísaphum; and topmung, to strike and ránum, I fear, make toprámum. And so also the inflexional forms of the personal pronouns which are used as qualifying or adjectival words, are to be regarded as quasi agglutinated and perfectly immutable prefixes of the substantive, entirely distinct from the correspondent pronouns of the possessive kind, which latter stand apart and are liable to declensional changes after the above model, like all other qualitives used substantivally or disjunctly.

* The participles (in vi, ta, and táng) being inherently relative, assume a substantial character without the necessity of suffixing the usual appellative formatives in wo vel cho, and mi, though these may be superadded, if to mark the sex of the agent be specially required. Thus to'vi, the striker, the he or she who strikes, is not only an adjective, as to'vi ta'wo, the beating boy, but an independent noun, the beater. Nevertheless would you specify the sex, you can say to'vi-wo, the male striker and to'vi-mi, the female striker.

VAYU VERBS.

1st.—Conjugation of neuters, conjugated from the Sheer root.

Verb *Phi* to come.*Infinitive Mood.*

Affirmative.—Phit'mung to come or to have come, aoristic.*

Negative.—Máng phit'mung, not to come, &c.

Gerunds.

Phit'he } Present. Coming { Phit'he with verbs in present tense.
 Phit'nung } { Phit'nung with verbs in preterite.
 Phit'hephit'he, or Phit'nung phit'nung, continuative present.
 Phit'phit'ha. Past, having come.
 Phit'singhe. Present or Future, when coming.
 Phit'khen. Past, after coming, after having come.

Participles.

Phit'vi. Present and future, who or what comes or will come. Also the comer substantival.

Phis'ta. Past, who or what has come or came.

Phit'táng,
 Verbal nouns, } These forms expressing respectively *passive* futurity or fitness
 Phit'chyang, } or habit, and instrumentality, locality and time, are hardly
 Phit'lung, } or not at all useable, save with verbs more or less transitive.
 Phit'sing. } See on to them in sequel.

N. B.—The medial t' and s' are merely enunciative, not formative.

Imperative Mood.

| <i>Singular.</i> | <i>Dual.</i> | <i>Plural.</i> |
|------------------|------------------|----------------|
| Phí. | Phíchhe. | Phíne. |
| | <i>Negative.</i> | |
| Thá phí. | Thá phíchhe. | Thá phíne. |

*Indicative Mood.**Future tense, used also for precent.*

| <i>Singular.</i> | <i>Dual.</i> | <i>Plural.</i> |
|------------------|--|--|
| 1. Phígnom. | { Phí chhokmi, excl. { Phí chhikmi, incl. | { Phíkókmi, excl. { Phíkem, incl. |
| 2. Phími. | Phí chhikmi. | Phínem. |
| 3. Phimi. | Phí chhikmi. | Phímém. |
| | <i>Preterite tense.</i> | |
| 1. Phísungmi. | { Phí chhongmi, excl. { Phí chhingmi, incl. | { Phí kikóngmi, excl. { Phí kikengmi, incl. |
| 2. Phími. | Phí chhem. | Phínem. |
| 3. Phími. | Phí chhem. | Phímém. |

*Subjunctive Mood.**Present tense.*

| | | |
|---------------|--|---|
| 1. Phíño | { nam or sa { Phí chhoknam, excl. { Phí chhiknam, incl. | { Phí koknam, excl. { Phí kenam, incl. |
| 2. Phí-nam-sa | Phí chhiknam. | Phíne nam. |
| 3. Phí-nam-sa | Phí chhiknam. | Phíne nam. |

* The infinitive is also used adjectivally and is nearly the same as the participle
 n "tang."

Preterite.

- | | | | | |
|------------------|---|------------------------|---|-------------------------|
| 1. Phisung phen. | { | Phi chhong phen, excl. | { | Phí ki kóng phen, excl. |
| 2. Phí phen. | | Phi chhing phen, incl. | | Phi ki keng phen, incl. |
| 3. Phí phen. | | Phi chhe phen. | | Phi ne phen. |
| | | Phi chhe phen. | | Phi me phen. |

*Interrogative Mood.**Present tense.**Singular.*

- | | | |
|------------------|---|--|
| 1. Phigno ki má. | { | And so on, as in the subjunctive; that is, the terminal m or mi is dropt and ki má, = or not, is added in lieu of the subjunctive signs, nam or sa and phen. |
| 2. Phí ki má. | | |
| 3. Phí ki má. | | |

Negative Mood.

There is no separate negative verb.

The affirmative verb is conjugated with má, the particle of negation, before it, Má phi gnom. Má phi sungmi, &c.

*Potential Mood.**Singular.*

- | | | |
|------------------------|---|---|
| 1. Phit' phas chungmi. | { | For all tenses, phasche being aoristic except in dual and plural. Phasche, the reflex form of the verb phá, is conjugated with the root phi to express power. For phasche see im'che in sequel, or 5th conjugation. |
| 2. Phit' phas chem. | | |
| 3. Phit' phas chem. | | |

*Precative Mood.**Singular.**Present.**Preterite.*

- | | | | |
|----------------|-------------|---|---|
| 1. Phi gnó yu. | Phisung yu. | { | Drops the final m or mi of the ordinary verb and substitutes for it the immutable verbal particle yú. |
| 2. Phi yu. | Phi yu. | | |
| 3. Phi yu. | Phi yu. | | |

Another form of the precative mood, equivalent to that which is usually joined with the imperative in English (let me come, come thou, let him come, &c.) is formed by compounding the infinitive of the main verb with the verb to give used as an auxiliary, thus:—

*Singular.**Dual.**Plural.*

- | | | |
|--------------------|-------------------|-------------------|
| 1. Phimung hásung. | Phimung háchhong. | Phimung hátikong. |
| 8. Phimung háto. | Phimung hátochhe. | Phimung hátome. |

The first ordinary form of the precative may be best rendered in English by O! that I may or might come, &c.; this, by, Let me come, Let him come &c., literally, give me to come, give him to come, and so on for the dual and plural according to the model of transitives in "to" in sequel.

*Optative Mood.**Singular.*

- | | | | |
|-------------------|------------------|---|---|
| 1. Phit' dakgnom, | Phit' daksungmi, | { | and so on throughout the verb dak to desire or want, which see in sequel. The root of the primary verb is prefixed. |
| 2. Phit' dakmi, | Phit' dāngmi, | | |
| 3. Phit' dakmi, | Phit' dāngmi, | | |

Remark.—Duty, necessity and propriety, as well as desire, are expressed by this mood, often in the impersonal form, mihi oportet vel decet, thus go phit dakmi, I must, I ought to, come. It is necessary or proper for me to come.

*Inchoative Mood.**Singular.*

- | | | |
|----------------------|---|---|
| 1. Phit' teschungmi, | { | and so on according to the paradigm of intransitives in che; this mood being constructed from the root of the main verb and the reflex form of the verb to begin. |
| 2. Phit' teschem, | | |
| 3. Phit' teschem, | | |

*Finitive Mood.**Singular.*

1. Phit' chuschungmi,
2. Phit' chuschem,
3. Phit' chuschem,

} and so on, as before noted, chusche being the reflex form of the verb to end.

Duty and necessity are expressed by the same word as wish or want, dak: consequently the optative mood includes the former two. What it is good for one to do, what is expedient or right, is expressed nearly as in English, e. g. Go phimung noh'ka, = it is good for me (mihi) to come, &c.

*Causal Mood.**Present.*

1. Phit' pingsungmi,
2. Phit' pingmi,
3. Phit' pingmi,

Preterite.

- Phit' ping kungmi,
- Phit' ping kum,
- Phit' ping kum,

} and so on for dual and plural throughout the verb pingko, which see. The root of the primary verb is prefixed.

*Continuative Mood.**Present Tense.**Singular.*

1. Phína phit'nognom.
2. Phína phit'nonum.
3. Phína phit'nomi.

Dual.

- { Phína phit'nochohokmi.
- { Phína phit'nochohikmi.
- Phína phit'nochohikmi.
- Phína phit'nochohikmi.

Plural.

- { Phína phit'nokokmi.
- { Phína phit'nokem.
- Phína phit'nonem.
- Phína phit'nomem.

Preterite.

1. Phína phit'nosungmi.
2. Phína phit'nonum.
3. Phína phit'nomi.

- { Phína phit'nochohongmi.
- { Phína phit'nochohingmi.
- Phína phit'nochohem.
- Phína phit'nochohem.

- { Phína phit'nokikongmi.
- { Phína phit'nokikengmi.
- Phína phit'nonem.
- Phína phit'nomem.

*Reciprocal Mood.**Present Tense.*

1. Phína phit'pánchung-mi.
2. Phína phit'pánchem.
3. Phína phit'pánchem.

- { Phína phit'pánachhokmi.
- { Phína phit'pánachhikmi.
- Phína phit'pánachhikmi.
- Phína phit'pánachhikmi.

- { Phína phit'páchikokmi.
- { Phína phit'páchikem.
- Phína phit'páchinem.
- Phína phit'páchimem.

Preterite.

1. Phína phit'pánchung-mi.
2. Phína phit'pánchem.
3. Phína phit'pánchem.

- { Phína phit'pánachhongmi.
- { Phína phit'pánachhingmi.
- Phína phit'pánachhem.
- Phína phit'pánachhem.

- { Phína phit'páchikongmi.
- { Phína phit'páchikengmi.
- Phína phit'páchinem.
- Phína phit'páchimem.

Remark.—Of the above two the first mood is formed by the root repeated with intervening reflex sign, and the substantive verb nó, to be. The second is formed by the same treatment of the root and the reflex form of the verb pá, to do, for which see conjugation V. The 2nd or reciprocal mood is hardly useable in the singular number. According to this paradigm of the neuter verb to come, are conjugated also the verbs Gá to be dilatory, Jí, to ripen (fruit), Rí, to rot, Sé, to fruit, Gó, to live, Yú, to descend, Ví, to be intoxicated, Phwé to quarrel, and, in a word, all words presenting a sheer root in the imperative and which are all neuters. Essentially the same is the conjugation of neuters having added to the sheer root a conjunct and now (quoad force or meaning) obsolete consonant* which consonant, however, according as it is labial, guttural or dental, occasions some slight

* Compare the so-called "euphonic additions" to the root in the cultivated Dravirian tongues.

variations in the form of conjugation. Nasal endings make no change (e. g. dong gnom, dongmi, dongmi). I subjoin a sample of each variation.

2nd.—Conjugation of neuters with a conjunct guttural, Dak', to desire (Da-k) .

Infinitive Mood.

| | | |
|-----------------|---------------------|----------------|
| Affirmative. | Dakmung, | } ut supra. |
| Negative. | Máng dakmung, | |
| <i>Gerunds.</i> | <i>Participles.</i> | |
| Dak he, | Dakvi, | } ut supra. |
| Dak nung, | Dakta, | |
| Dak he dak he, | Daktang, | |
| Dak dak ha, | Verbal nouns, | |
| Dak sing he, | Dak chyang, | |
| Dak khiu | Dak lung, | |
| | Dak sing, | } not useable. |

The negative of all is formed as in the infinitive, Máng dak he, Máng dak vi, &c.

Imperative Mood.

| | | |
|------------------|-----------------------------|----------------|
| <i>Singular.</i> | <i>Dual.</i> | <i>Plural.</i> |
| Dak' | Dakchhe. | Dángue. |
| | <i>Negative Imperative.</i> | |
| Thá dak. | Thá dakchhe. | Thá dúngue. |

Indicative Mood.

Present Tense.

| | | |
|------------------|----------------------|---------------------------|
| <i>Singular.</i> | <i>Dual.</i> | <i>Plural.</i> |
| 1. Dak gnom. | { Dak chhokmi, excl. | { Dak kokmi, excl. |
| | { Dak chhikmi, incl. | { Dak kem, incl. |
| 2. Dakmi. | Dak chhikmi. | Daknem. |
| 3. Dakmi. | Dak chhikmi. | Daknem. |
| | <i>Preterite.</i> | |
| 1. Daksungmi. | { Dak chhongmi. | { Dak'ki kongmi, or Dáki |
| | { Dak chhingmi. | { kongmi. |
| | | { Dak'ki kengmi, or Dáki- |
| | | { kengmi. |
| 2. Dángmi. | Dak chhem. | Dak nem or Dánguem. |
| 3. Dángmi. | Dak chhem. | Dakmem. |

This conjugation changes the radical k into ng and lengthens the vowel.

The other moods as before.

Thus are conjugated Buk', to get up, Bok', to be born, Bek', to enter, Lok', to issue, to appear, Gik', to flow, Kák', to shine (sun), Chok', to glow (sun), Jik' to be broken, Jok', to come up, Duk', to fall from aloft, Ruk', to fall on ground, Ok', to weep, Juk' to be wise, and all such words, as also the compounds épidak cacare, chépi dák mingere, Tíidak, to be thirsty.

3rd.—Conjugation of neuters with a conjunct labial (m or p) : I. in m. Dam to be full and to be lost, or to fill and to lose in the intransitive senses.*

Infinitive and participles as before.

Imperative.

| | | | |
|--------------|----------|--------------|------------|
| Affirmative. | Dam. | Damche. | Damne. |
| Negative. | Thá dam. | Thá damchhe. | Thá damne. |

* The Vayu neuter and passive conjugations coincide and the expressions often tally with the equivalent English ones as dámi, it is lost, and it is filled or full, that is, self-lost and self-filled. But the Vayu reflex verb, like the French, can express the latter meaning otherwise, viz. by damchem which is equivalent to dāml used neutrally. Dam lá lam is another equivalent form answering literally to Khógiya in Urdu though Vayu never forms its passives like Urdu.

*Indicative Mood.**Present Tense.*

| | | |
|-------------------------|--|------------------------|
| 1. Dámum (Dam- mum). | { Dam chhokmi, excl. Dam chhikmi, incl. | { Dámpopmi. Dámpem. |
| 2. Dámi. | Dam chhikmi. | Damnem. |
| 3. Dámi. | Dam chhikmi. | Dámem. |

Preterite.

| | | |
|----------------|--|----------------------------------|
| 1. Dam sungmi. | { Dam chhongmi, excl. Dam chhingmi, incl. | { Dámpi kongmi. Dámpi kengmi. |
| 2. Dámi. | Dam chhem. | Damnem. |
| 3. Dámi. | Dam chhem. | Dámem. |

This conjugation changes
gnom into mum and kok-
mi, kem into popmi,
pem, besides lengthening
the vowel.

The other moods as before. In subjunctive, Dámonam, Damnam Damnam.

Thus also conjugate Ram to be afraid, Dum to become, &c. II. in p.
Jyóp' to be tired.

Imperative.

| | | |
|----------------|----------------|--------------|
| Aff. Jyóp'. | Jyop'chhe. | Jyómne. |
| Neg. Thá jyop. | Thá jyop'chhe. | Thá jyóp'ne. |

*Indicative.**Present.*

| | | |
|-----------------|--|--------------------------------|
| 1. Jyop' mum. | { Jyop chhokmi, excl. Jyop chhikmi, incl. | { Jyoppopmi. Jyoppem. |
| 2. Jyop'mi. | Jyop chhikmi. | Jyopnem. |
| 3. Jyop'mi. | Jyop chhikmi. | Jyopmem. |
| 1. Jyop sungmi. | { Jyop chhongmi. Jyop chhingmi. | { Jyópikongmi. Jyópikengmi. |
| 2. Jyómi. | Jyop chhem. | Jyómnem. |
| 3. Jyómi. | Jyop chhem. | Jyómem. |

This conjugation changes p into
m and lengthens the vowel.
As in the last kokmi, kem be-
come popmi, pem.

Other moods as before. Subjunctive has jyop'monam, jyop'nam, jyopnam
Jyopsung phen, Jyóm phen, Jyóm phen.

Thus also conjugate Thíp, to set, (sun), Yép, to be sharp-edged, &c.

4th.—Conjugation of neuters with conjunct dental (t).

Hot', to utter, talk.

Infinitive and participles and gerunds as before.

*Imperative Mood.**Singular.**Dual.**Plural.*

| | | |
|----------------|--------------|-----------|
| Aff. Hot'. | Hoschhe. | Hóne. |
| Neg. Thá hot'. | Thá hoschhe. | Thá hóne. |

Indicative present.

| | | |
|---------------|--|--------------------------|
| 1. Hot' gnom. | { Hoschbokmi, excl. Hoschhikmi, incl. | { Hot'kokmi. Hot'kem. |
| 2. Hot'mi. | Hoschhikmi | Hot'nem. |
| 3. Hot'mi. | Hoschhikmi | Hot'mem. |

*Preterite.**Singular.**Dual.**Plural.*

| | | |
|--------------|--------------------------------|--------------------------------|
| 1. Hosungmi. | { Hoschhongmi. Hoschhingmi. | { Hotikong mi. Hotikeng mi. |
| 2. Hónmi. | Hoschhem. | Hónem. |
| 3. Hóumi. | Hoschhem. | Hónmem. |

This conjugation changes the t into
n, and retains the t before the plural
kokmi kem, which are unchanged.
It lengthens the vowel as usual.

Thus conjugate Pat', to fight, Met' to die, But', to flower, &c.

Remark.—The verbs dung to be dry, dong to arrive, then to win, Yáng, to lose or decrease, Min, to be ripe, Hon, to be big, Bon, to fly, Lun, to run, and all others ending in a nasal (n or ng) follow without change the sheer root paradigm, or phí aforesaid.

5th.—Conjugation of reflex or active intransitive (including also some neuters) verbs in che, that is, which have this (the only) reflex sign added to their root in the imperative which always strikes the key note to the several conjugations, always having the formative affix whenever there is one.

Im, to sleep.

Infinitive Mood.

Aff. Immung. To sleep or to have slept } aoristic.
Neg. Máng immung. Not to sleep, &c. }

Remark.—I-mung is as often used as immung. So that í may possibly be the root, not im.

Gerunds.

Im he,
Im nung,
Im im há,
Im sing hé,
Im khen, } ut supra.

Participles.

Imvi (invi),
Imta (ímta),
Imtáng
Verbal nouns } not useable, } ut supra.
Imchyáng,
Imlung,
Imsing,

Negatives, as in infinitive, that is, by prefixing máng.

Imperative Mood.

Singular.

Aff. Imche.
Neg. Thá imche.

Dual.

Im uáchhé.
Thá imnáchhé.

Plural.

Imchíné.
Thá imchíné.

Indicative Present.

| | | |
|---------------|----------------|---------------|
| 1. Imchungmi. | { Imnachhokmi. | { Imchikokmi. |
| | { Imnachhikmi. | { Imchikem. |
| 2. Imchem. | Imnachikmi. | Imchinem. |
| 3. Imchem. | Imnachikmi. | Imchimem. |

Preterite.

| | | |
|---------------|----------------|----------------|
| 1. Imchungmi. | { Imnachongmi. | { Imchikongmi. |
| | { Imnachingmi. | { Imchikengmi. |
| 2. Imchem. | Imnachhem. | { Imchinem. |
| 3. Imchem. | Imnachhem. | { Imchimem. |

Thus are conjugated all reflex verbs whatever, having the che sign whether they be primitive or derivative (and all transitives can be so commuted) as chikche, to remember, mángche, to forget, lische, to learn, musche, to sit, ipche, to get up, khokche, to walk, pipche, to suck, sipche, to wake, lipche, to vomit, popche, to lick, kinche, to lie hid, lunche, to run, déngche, to bathe, upche, to wash one's self, tesche,* to begin, chusche, to end, khwénkhwén pángche, to cough, khikche, to sneeze, líche, to grow (plant only), gosche, to be rich, vekche to contain, dosche, to sustain or hold up, dunche, to dig for one's self, phasche, to be able,

* Tesche gives, teshto set free, wonche, gives wonto, in comparison, be able.

wónche,* to master one's self, be patient or firm, bongche* to be happy, giwón pónche, to keep silence, rusche, to flee away, kwompánche, to sing, yángche, to decrease or lose, jonche, to grow or increase (animal only), yukche, to cut one's self, sische, to kill one's self, tánche to put for one's self, senche, to know one's self, or to know simply, hánche, to give to one's self, phokche, to beget or give birth to for one's self, ingkche, to buy, jyápche, to exchange, khwásche, to tighten one's self, *Khwásche*, to feed one's† self; túnkoche, to drink, jánkoche, to eat, chénche,‡ to piss, topche, to beat one's self, yosche, to like, &c. &c.

Remark.—These verbs are aoristic in fact, though in the dual and plural they are obliged to accommodate themselves to the inflexible forms of those numbers and such (by and by will be seen) is the case also with the aoristic transitives in “to.” The reflex duals and plurals however always retain their own special signs or na and chi which are interchangeable for the sake of euphony, na being preferred to “chi” in the dual to prevent cacophonous repetition of the ch.

6th.—Conjugation of transitives in “to” not having a precedent sibilant.

The verb há, to give.

Infinitive Affirmative.

Hámung, to give or to have given, aoristic.

Infinitive Negative.

Máng hámung. Not to give, &c.

Gerunds.

| | | | | |
|----------------|---|---|---|---|
| Há he. | } | Present, giving | { | with main verb in present or future with main verb in preterite. |
| Hánung. | | | | |
| Háhe háhe. | } | Continuative present, continually giving. | | |
| Hánung hánung. | | | | |
| Háhá ha. | | Past. Having given. | | |
| Há singhe. | | Present or future. When giving. | | |
| Há khen. | | Past. After having given, after giving. | | |

Participles.

| | |
|---------|---|
| Hávi. | Who gives or gave or will give, aoristic. The giver. |
| Háta. | Past (passive). Who or what has been given. The given. |
| Hátáng. | Future passive. What will be given, what customarily given, what fit to be given. |

Verbal Nouns.

| | | |
|-----------|---|---|
| Háchyáng. | { | Expresses the instrument, as háchyáng gót, the hand that gives. It is also used substantively in a neuter sense, thus topchyang, a hammer. Hammerer is to'vi. |
| Hálúng. | | |
| Hásing. | | Expresses the place, hálúng, the place of giving. |
| | | Expresses the time, hásing, the time of giving. |

The negative of gerunds, participles and verbal nouns is expressed, as in the infinitive, by the prefix máng, máng háhe, máng hávi, &c.

Imperative Mood.

| <i>Singular.</i> | <i>Dual.</i> | <i>Plural.</i> |
|------------------|--------------|----------------|
| Aff. Háto. | Háchhe. | Háne. |
| Neg. Thá háto. | Thá háchhe. | Thá háne. |

* Tesche, gives, teshto, set free, wonche, gives, wonto, in comparison be able.

† *Kh* underlined is the Arabic guttural.

‡ Chénche of this sort from chént.

Dual and Plural of Object.

- * { Dual. Hátochhé. Give to them two.
 { Plural. Hátomé. Give to them all.
 Negative. Thá hátochhé. Thá hátoime.

*Indicative Mood.**Present or future.**Singular.**Dual.**Plural.*

1. Hátungmi.

- { +Háchhokmi, excl.
 { +Háchhikmi, incl.

- { Hátikokmi, excl.
 { Hátikem, incl.

Dual and Plural of Object.

- * 1. { Hátungchhem.
 * 1. { Hátungmem.
 2. Hátum.

- I give to them two.
 I give to them all.
 +Háchhikmi.

+Hánem.

Dual and Plural of Object.

- * { 2. +Hátuchhem.
 * { 2. +Hátomem.
 { 3. +Hátum.

- Thou givest to them two.
 Thou givest to them all.
 +Hátuchhem.

+Hátomem.

Dual and Plural of Object.

- * { 3. +Hátuchhem.
 * { 3. +Hátomem.

- He gives to them two.
 He gives to them all.

Preterite.

1. Hátungmi.

- { Háchhongmi, excl.
 { Háchhingmi, incl.

- { Hátikongmi, excl.
 { Hátikengmi, incl.

Dual and Plural of Object.

- * { 1. Hátungchhem.
 * { 1. Hátungmem.
 { 2. Hátum.

- I gave to them two.
 I gave to them all.
 +Háchhem.

+Hánem.

Dual and Plural of Object.

- * { 2. Hátuchem.
 * { 2. Hátomem.
 3. +Hátum.

- Thou gavest to them two.
 Thou gavest to them all.
 +Hátuchhem.

+Hátomem.

Dual and Plural of Object.

3. +Hátuchhem.
 3. +Hátomem.

- He gave to them two.
 He gave to them all.

*Negative Mood.**Singular Indicative present.*

1. Má hátungmi.
 2. Mé hátum.
 3. Má hátum.

- { Dual and plural in like manner, merely by prefixing
 { the negative particle má. N. B.—Háto and all
 { other transitives of its class, are essentially aoristic.
 See remark foregoing.

* The bracketed portions express peculiar forms of this language.

The mark + before any form signifies that it belongs also to the passive which see. The difference is expressed in such cases by the use of the separate prefixed pronouns in the instrumental case for the active; in the objective or accusative case for the passive, or g'ha, gonha, wathiha, and go, gon wathi for the three persons singular and so on for dual and plural.

*Interrogative Mood.**Singular Indicative present.*

- | | | |
|------------------|---|--|
| 1. Hátung ki má. | { | Dual and plural in like manner and all the rest of the verb also; that is, cut off the final mi or m and substitute ki má. |
| 2. Hátó ki má. | | |
| 3. Hátó ki má. | | |

*Potential Mood.**Singular Indicative present.*

- | | | |
|------------------|---|--|
| 1. Há wóntungmi, | { | and so on through the rest of the verb; wóntó, to can, being conjugated like háto, the root of which is prefixed merely (wóntó is used with transitives and phásche with intransitives). |
| 2. Há wóntum, | | |
| 3. Há wóntum, | | |

*Optative Mood.**Singular Indicative present.*

- | | | |
|---------------|---|--|
| 1. Há daknom, | { | and so on through the rest of the verb dak, to wish or want, as before given. The root of the main verb is prefixed as before. |
| 2. Há dakmi, | | |
| 3. Há dakmi, | | |

Precativè Mood.

(That I may give).

Singular Indicative present.

- | | | |
|---------------|---|---|
| 1. Hátung yu. | { | And so on, after the manner of the interrogative mood as to the main verb, to which is added the immutable verbal root expressive of wish in the nature of prayer, hátung yu = o! si mihi accedat dare. |
| 2. Hátó yu. | | |
| 3. Hátó yu. | | |

Remark.—The solicitivè form, let me give, let him give, há hásung, há háto is seldom used owing to the iteration of the same root in two different senses.

*Subjunctive Mood.**Present.**Preterite.*

- | | | | |
|----------------|--------------|---|--------------------------------|
| 1. Hátung nam. | Hátung phen, | { | and so on for dual and plural. |
| 2. Hátó nam. | Hátó phen, | | |
| 3. Hátó nam. | Hato phen, | | |

Continuative Mood.

- | | | |
|----------------------|---|--------------------------------------|
| 1. Há na há nógnom,* | { | and so on as in the neuter verb phí. |
| 2. Há na há nónum, | | |
| 3. Há na há nómi, | | |

Reciprocal Mood.

- | | | |
|--------------------------|---|--|
| 1. Há na há páñchungmi,† | { | and so on as before with reflex of the root pá, to make, conjugated like im-che. |
| 2. Há na há páñchem, | | |
| 3. Há na há páñchem, | | |

* The reflex form of the verb mu, to sit, imperative musche, is often used in this sense há na há muschungmi, muschem, muschem, &c. like imche. So Newári has biye chona = I sit giving, I remain giving.

† The transitive form of pá, to do, is sometimes preferred to the reflex, Háhá pángmi, pómi, pómi, &c. See conjugation 10th.

*Causal Mood.**Imperative.**Singular.*

Aff. Há píngko.
Neg. Há thá píng.

Dual.

Há píngchhe.
Há thá píngche.

Plural.

Há píngne.
Há thá píngne.

Indicative present.

1. Há píngsúngmi,
2. Há píngmi,
3. Há píngmi,

{ and so on according to the form of conjugating the transitive verb píngko, which see in sequel and to which the root of the main verb is prefixed when causation is expressed.*

*Passive Voice.**Imperative Mood.*

Aff. Hásung.
Give thou to me.
Neg. Thá háguo.

{ Háchhong.
Give thou to us two.
Thá háchhok.

{ Há kí kóng.
Give thou to us all.
Thá há kók.

Dual and plural of agent.

Hásúng chhé.
Hásúng né.
Thá há súng chhé.
Thá há súng né.

Do ye two give to me.
Do ye all give to me.

{ The negative forms.

*Indicative Mood.**Present.**Singular.*

1. Hágno = gives to me.

Dual.

{ +Háchhokmi, excl.
+Háchbikmi, incl.
= gives to us two.

Plural.

{ Hákókmi, excl.
Hákém, incl.
= gives to us all (subaudi ille vel iste).

Dual and plural of the agent.

- { 1. Hágnochhem.
- { 1. Hágnohem.
2. Hámi.

Give to me they two (or ye 2).
Give to me they all.

+Háchbikmi.

+Hánem.

Dual and plural of agent.

- { 2. Hámi.
- { 2. Hámi.
3. +Hátum.

Give to thee they two.

Give to thee they all.

+Hátuchhem.

+Hátomem.†

* Causal verbs have all the complete forms of conjugation proper to primary verbs; and, as they are constituted by transitives, they take, like transitives, the reflex and passive and double objective forms, being conjugated from píngche and píngsung and píng (k) to, as well as píngko. The reflex of háto is háñche, conjugated like imche: the quasi passive is há súng, for which see on. Háto has no doubly objected form. Itself expresses give it to him or give him.

† The forms marked with a cross precedent (+) are common to both voices. See active. There is no infinitive of this quasi passive. The causal transitive which carries a passive as well as active sense has it, thus Hámung, to give, há-píngmung, to be given, more properly, to cause to give. So Newári has býe, to give, býeke (ke the causal sign) to be given or cause to give. Newári has no other semblance even of a passive. Váyu with its suffixed objective forms of the pronoun has, as above seen. But this again is weakened by the special restriction of the suffixes, thus hánun, gives or gave to thee, *I only* and no other.

Dual and plural of agent.

- | | |
|------------------|-----------------------|
| { 3. +Hátochhem. | Give to him they two. |
| { 3. +Hátomem. | Give to him they all. |

*Preterite.**Singular.**Dual.**Plural.*

- | | | |
|--------------|--|--|
| 1. Hásúngmi. | + { Hachhongmi, excl. Hachhingmi, incl. | { Hakikongmi, excl. Hukikengmi, incl. |
|--------------|--|--|

Dual and plural of agent.

- | | |
|-------------------|----------------------------------|
| { 1. Hasungchhem. | Gave to me they two (or ye two). |
| { 1. Hasungmem. | Gave to me they all (any). |
| 2. Hámi. | +Háchem. +Hánem. |

Dual and plural of agent.

- | | |
|-------------|------------------------|
| { 2. Hámi. | Gave to thee they two. |
| { +2. Hámi. | Gave to thee they all. |
| +3. Hátum. | +Hátochhem. +Hátomem. |

Dual and plural of agent.

- | | |
|------------------|-----------------------|
| { 3. +Hátochhem. | Gave to him they two. |
| { 3. +Hátomem. | Gave to him they all. |

A second passive may be formed by the passive participle and substantive verb, of clear meaning, but eschewed owing to the relative sense inherent in the participles.

Indicative present singular.

- | | |
|-----------------|--|
| 1. Háta nógnom. | { And so on through the verb nó, to he—an irregular verb which is given in the sequel. <i>Remark.</i> —To this responds hávi nógnom of the active voice. |
| 2. Háta nónum. | |
| 3. Háta nómi. | |

Passive potential.

(I can be given).

Present singular.

- | | | | |
|----------------|---|-------------|--|
| 1. Há wóngnom. | } And so on through dual and plural, the passive of wónto being conjugated like that of háto. | 1. Hágnoyu. | } And so on through dual and plural, according to the passive forms of háto less the final mi, or m which is dropped, and the immutable verbal particle yu, subjoined. |
| 2. Há wóngmi. | | 2. Háyu. | |
| 3. Há wóngtum. | | 3. Hátoyu. | |

Preterite.

- | | | | |
|-------------------|---|--------------|--|
| 1. Há wóngsungmi. | } And so on through dual and plural, the passive of wónto being conjugated like that of háto. | 1. Hásungyu. | } And so on through dual and plural, according to the passive forms of háto less the final mi, or m which is dropped, and the immutable verbal particle yu, subjoined. |
| 2. Há wóngmi. | | 2. Háyu. | |
| 3. Há wóngtum. | | 3. Hátoyu. | |

Remark.—Observe that in the potential mood, as in the causal below, the expression of the passivity is transferred from the truncated main verb, which shows only its crude root, to the secondary verb.

Passive Causal.

(I am caused to be given (or to give)).

- | | | | |
|-----------------|------------|-------------------|--------------|
| 1. Há pínggnom. | } Present. | 1. Há píngsúngmi. | } Preterite. |
| 2. Há píngmi. | | 2. Há píngmi. | |
| 3. Há píngmi. | | 3. Há píngnum. | |

And so on through dual and plural, following the conjugational forms of the passive voice of the verb píngko, to send, which see.

Passive Subjunctive.

(If I be given).

| | | | |
|----------------|------------|----------------|--------------|
| 1. Há gno nam. | } Present. | 1. Hásúngphen. | } Preterite. |
| 2. Há nam. | | 2. Há phen. | |
| 3. Háto nam. | | 3. Háto phen. | |

Like the precativè, only substituting the subjunctive particles for the single precativè one. And the interrogative mood of the passive merely substitutes the particle of interrogation or *kiwá*, *hálnoki má*, &c.

Special forms.

Active or passive, = agento objective.

1st.—I to thee.

| | | |
|------------|---------------------------------|-------------|
| Hánúm. | Give or gave to thee I only. | } Aoristic. |
| Hánochhem. | Give or gave to you two I only. | |
| Háonem. | Give or gave to you all I only. | |

2nd.—Thou to me.

| | | |
|---------------|---------------------------------|------------------|
| γHágnom. | Givest to me thou (or he). | } Present tense. |
| γHágnochem. | Give to me ye two (or they two) | |
| Hágnonem. | Give to me ye all only. | |
| γHásungmi. | Gavest to me thou. | } Preterite.* |
| γHasungchhem. | Gave to me ye two. | |
| Hásungnem. | Gave to me ye all. | |

Thus are conjugated all transitives in “*tó*” that have the root only precedent, as *Wóto*, to cleanse, *Láto*, to snatch away, *Chíto*, to split, *Jíto*, to tear, *Phóto*, to eradicate, *Chéto*, immingere, *Ríto*, to cause to rot or rot it, *Líto*, to cause to grow, or grow it, &c. The verbs with a “*p*” before the sign, as *lipto*, to vomit, *napto*, to compress, change the *p* into *m* in the plural imperative and in the second person plural preterite, as *namne*, do ye all compress, and *namnem*, ye all compressed. Those with a “*k*” before the sign, as *thiktó*, to shut, *khikto*, to cause to sneeze, change the *k* into *ng*, as *thingne*, do ye all shut, and *thingnem*, ye all shuttèd it. No other precedent letter makes any change, save the sibilant to which we shall next proceed as forming a different conjugation. Meanwhile conjugate as above *yángto*, to decrease, *bongto*, to please, *Mangto*, to cause to forget or to forget him, *phimto*, to depress, *khámto*, to summon, *khamto*, to frighten, *Thento*, to cause to win, *Yemto*, to burn, *Umto*, to burn corpse, *Wónto*, to wiu, to be able,† *Pélto*, to wring or extract juice, *Tamto*, to cry out, *Damto*, to fill, &c. &c.

7th conjugation of verbs in “*tó*” having a precedent sibilant (always palpably felt in the reflex, sometimes not so in the transitive, wherein something like an abrupt tone, however, indicates in such cases its latent presence, or else a sound like English *th*, or *ph*, as *phá'to*, *múph'to*, *hóth'to* for *phásto*, *músto* and *hósto*. But observe, there is no true tone as in the 8th and 11th conjugations (to'po and pho'ko) and the real euphonic intercalary letter is the sibilant, *s*).

* The forms preceded by the mark *γ* are not special but are repeated here to illustrate such as are special. Compare the whole with those of the Peruvian language of America apud Markham, p. 397. There are slight differences indicating diverse degrees of decomposition, but the resemblance in substance and principle is wonderful. I commend it to those who so dogmatically tell us it is not legitimate philology to heed such coincidences.

† This neuter sense of *wonto* is restricted to its use as a compound, and it is so used only with transitives. With intransitives the reflex form of *phá* to be able is employed: *top wontum*, he can beat: *imphaschew*, he can sleep.

The verb sí, to kill.

Infinitive.

Aff. Sit'mung, to kill, to have killed, } aoristic.
 Neg. Máng sit'mung, not to kill, &c. }

Gerunds.

Sit'he,
 Sit'nung,
 Sit'he sit'he,
 Sit' sit'ha,
 Sis' singhe,
 Sit' khen. } ut supra.

Participles.

Sit'vi,
 Sista,
 Sistang, } ut supra.

Verbal Nouns.

Sischyáng,
 Sitlúng,
 Sitsíng, } ut supra.

Their negatives are formed by prefixed máng, mángsit'he, mángsit'vi, &c.

*Imperative.**Singular.*

I. Sisto.

Dual.

Sischhe.

Plural.

Séné ? Sitne.

Dual and plural of object.

II. Sistochhé.

Do thou kill them two.

III. Sistome.

Do thou kill them all.

Negatives.

I. Thá sit'.

Thá sischhe.

Thá séné ? Sitne.

II. Thá sit'chhik.

Kill not them two.

III. Thá sit'me.

Kill not them all.

*Indicative present.**Singular.*

1. Sinmi.*

Dual.

+ { Sischhokmi, excl.
 Sischhikmi, incl.

Plural.

+ { Sitkokmi, excl.
 Sitkem, incl.

Dual and plural of agent.

1. Sinchhem.

I kill them two.

1. Sinmem.

I kill them all.

2. +Sitmi.

+Sischhikmi.

+Sitnem.

Dual and plural of object.

2. Sischhikmi.

Thou killest them two.

2. Sitmem.

Thou killest them all.

3. +Sitmi.†

+Sischhikmi.

+Sitmem.

* Another form, = sinmi, sitmi, sitmi, is sitvi nognom, sitvi nonum, sitvi nomi, and so on, formed by active participle and substantive verb.

† Compare with sinmi, sitmi, sitmi, the correspondent syána, syáta, syáta of Newári. The root (sí, sá vel syá) and the augments (n and t) are alike and alike disposed, that is, the augment following the root. So also in both tongues the augment of the 2nd and 3rd person, or t, constitutes the passive in all 3 persons si-t-guom; sí-t-mi, sí-t-mi = Newári syá-ta, syá-ta, syá-ta. The si-t of the one is precisely the sya-t or sha-t of the other, the t being that mark of action, apart from one's own, whereby the passive (with the help of the separate prefixed objective pronoun in both tongues alike) is denoted. And yet these two languages have all the superficial marks of wide contrariety and opposition. In the vocabulary I have pointed attention to identical roots or words used verbally in one of these tongues, substantively in the other, or of which the one has the primitive, the other the derivative. What I would imply is that identical roots and constructive principles may be found in this family of tongues where one would least expect to find them.

Preceptive Mood.

(That I may kill).

Present.

1. Sin yu.
2. Sit yu.
3. Sit yu.

Preterite.

1. Sistung yu,
 2. Sisto yu,
 3. Sisto yu,
- { &c. as in the uncompounded verb.

*Subjunctive Mood.**Present.*

1. Sinnam.
2. Sitnam.
3. Sitnam.

Preterite.

1. Sistungphen,
 2. Sistophen,
 3. Sistophen,
- { and so on as in the uncompounded verb.

*Continuative Mood.**Present.*

1. Sit'nasit' nógnom.
2. Sit'nasit' nónum.
3. Sit'nasit' nómi.

Preterite.

- Sit'nasit' nósúngmi,
 - Sit'nasit' nónum,
 - Sit'nasit' nómi,
- { and so on conjugating the auxiliary after the model of phi.

Reciprocal Mood.

1. Sit'nasit' páñchúngmi,
2. Sit'nasit' páñchem,
3. Sit'nasit' páñchem,

{ &c. after the model of imche, which, like all intransitives in che, is aoristic.

Causal Verb.

As before in all respects.
See Háto.

PASSIVE VERB.

*Imperative Mood.**Singular.*

- Aff. Sissúng.
Neg. Thá sitgnó.

Dual.

- Sischhóng.
Thá sischhók.

Plural.

- Sisti kóng.
Thá sit kók.

Dual and plural of agent.

- Aff. { Sissungchhé.
 { Sissungné.
Neg. { Thá sitgnochhé.
 { Thá sitgnoné.

- Do ye two kill me.
Do ye all kill me.
Do ye two not kill me.
Do ye all not kill me.

*Indicative present.**Singular.*

1. Sit gnom
= kills me (sub.
audi ille vel iste).

Dual.

- +Sischhokmi, excl.
+Sischhikmi, incl.
= kills us two.

Plural.

- +Sit kókmi, excl.
+Sit kém, incl.
= kills us all.

Dual and plural of agent.

- { 1. Sit gnochhem.
 { 1. Sit gnomem.
 2. +Sitmi.

- Kill me they two (or ye two).
Kill me they all.
+Sischhikmi.

+Sit'nem.

Dual and plural of agent.

- { 2. Sitmi.
 { 2. Sitmi.
 3. +Sitmi.

- Kill thee they two (or we two).
Kill thee they all (or we all).
+Sischhikmi.

+Sitmem.

Dual and plural of agent.

- { 3. +Sischhikmi. Kill him they two (or ye two).
 { 3. +Sitmem. Kill him they all.

Preterite.

1. Sissungmi. { +Sischhóngmi, excl. { +Sistikóngmi, excl.
 { +Sischhíngmi, incl. { +Sistikéngmi, incl.

Dual and plural of agent.

- { 1. *Sissungchlém. Killed me they two (or ye two).
 { 1. Sissungmém. Killed me they all.
 2. Siumi. Sischhem. Senem? Sitnem.

Dual and plural of agent.

- { 2. Sinmi. Killed thee they two (or we two).
 { 2. Sinmi. Killed thee they all (or we all).
 3. Sistum. Sistochhem. Sistomem.

Dual and plural of agent.

- { 3. Sistochhem. Killed him they two.
 { 3. Sistomem. Killed him they all.

SECOND FORM OF THE PASSIVE.

Infinitive Mood.

- Aff. Sista { nó't'mung, to be } killed.
 { dú'mung, to become }
 Neg. Sista { máng nó't'mung, } not to be
 { máng dú'mung, } not to become } killed.

Gerunds.

- Sista nó't'he, dúmhē,
 Sista nó't'nung, dúmning,
 Sista nó't'not'há, dúmdumha,
 Sista nó't'singhe, dúmsinghe,
 Sista nó't'khen, dúmkhen, } ut supra.

Participles.

- Sista nó't'vi or dúmvi,
 Sista nó't'a or dúmta,
 Sista nó't'áng, dúmtáng, } ut supra.

Verbal nouns.

- Sista nó't' or dúm-chyang,
 Sista nó't' or dúm-lung,
 Sista nó't' or dúm-sing, } ut supra.
 Negatives by máng prefixed.

*Imperative present.**Singular.**Dual.**Plural.*

- Aff. Sista, nó dum. Sista { nóche. } Sista { nóne.
 { dumche. } { dúmne.
 Neg. By prefixed participle thá.

* Brackets before the repeated numbers (answering to 3 persons of verb), and the crosses (+), as before explained.

Indicative present.

| | | |
|----------|---------------------|---|
| 1. Sista | { nógnom. dúnum. | } And so on according to the paradigms phi and dam. |
| 2. Sista | { nónum. dúmi. | |
| 3. Sista | { nómi. dúmi. | |

Remark.—This form of the passive has a correspondent active form, sit'vi, nóg-nom vel dúnum, and both are singularly free from doubt as to the sense, and singularly correspondent with our English idiom, I am killing, I am killed, the phrases being in effect, I am the killer and I am the killed.

But, owing to the inherence of the relative sense in the participles, these forms are eschewed. The following correspondent forms in Khás and Newári are equally available in those languages and equally eschewed for the same reason.

*Khás.**Active.**Passive.*

| | |
|----------------|--------------|
| 1. Hányya hún. | Hányako hún. |
| 2. Hányya hós. | Hányako hós. |
| 3. Hányya hó. | Hányako hó. |

Newári.

| | |
|---------------------------|----------------|
| 1. Ji syáhmakhá, or jú. | Syánahmakhá, } |
| 2. Chha syáhmakha, or jú. | Syánahmakha, } |
| 3. Wó syáhmakha, or jú. | Syánahmakha, } |

kha or júlo.*

*Special forms of action between the 2 first persons.**First form, I to thee.*

| | |
|-----------------|---|
| S. Sit'núm. | Kill or killed or will kill thee I only. |
| D. Sit'nochhem. | Kill or killed or will kill you two I only. |
| P. Sit'nonem. | Kill or killed or will kill you all I only. |

Second form, Thou to me.

| | | |
|--------------------|--|-----------------------|
| S. γSit'gnom. | Killst or wilt kill me thou (or he). | } Present and Future. |
| D. γSit'gnochhem. | Kill or will kill me ye two (or they two). | |
| P. Sit'gnonem. | Kill or will kill me ye all only. | } Preterite. |
| S. γSit'sungmi. | Killedst me thou (or he). | |
| D. γSit'sungchhem. | Killed me ye two (or they two). | |
| P. Sit'sungnem. | Killed me ye all only. | |

The negative merely prefixes má as in active voice.

The interrogative drops the final m or mi and substitutes ki má, as in active voice.

The potential is conjugated with the passive form of the secondary verb wónto.

*Present and future.**Preterite.*

| | | |
|----------------|-------------------|---|
| 1. Sit'wónom. | 1. Sit'wónsungmi. | } and so only conjugating like passive of Háto. |
| 2. Sit'wónmi. | 2. Sit'wónmi. | |
| 3. Sit'wóntum. | 3. Sit'wóntum. | |

Optative mood precisely as in the active voice, dakgnom, meaning I desire and I am desired, and the passive expression being removed from the truncated main verb.

* Kha and jú are substantive verbs in Newári, whercof the former is immutable, and the latter becomes júlo in the preterite.

*Precative Mood.**Present.**Preterite.*

1. Sit' gno yu.
2. Sit' yu.
3. Sit' yu.

1. Sissung yu,
2. Sin yu,
3. Sisto yu,

} and so on, by dropping final *m* or *mi* of the passive and substituting immutable precative particle *yu*.

The subjunctive mood resembles the above, taking only its own signs in lieu of *yu*, the precative sign.

*Causal.**Present.**Preterite.*

1. Sit ping gnom.
2. Sit pingmi.
3. Sit pingmi.

1. Sit pingsungmi,
2. Sit pingmi,
3. Sit pingkum,

} and so all through all the passive forms of the verb pingko, which see.

According to the above paradigm of *sisto*, conjugate also *pisto* to bring,* *khisto* to rub, *khwasto*, to feed, *phasto*, to enable (*pha'to*), *chásto*, to hit with stone (*chá'to*), *khwásto* (*khwá'to*), to tighten, *dosto*, to sustain for another, (*dophto*) *musto*, to seat (*muphto*), *testo*, to set at liberty or cause to begin (*tethto*), *thesto*, to kick (*thethto*), *chusto*, to finish it (*chuphto*), *chisto*, to suspend, *isto*, to tell, *risto*, to rot it, *josto* (*jopto*), to kindle, *chhisto*, to relate (*chhi'to*), *wásto*, to abandon, *yosto*, to approve, like, *násto*, to wet (*ná'to*), *lusto* (*luphto*), to transplant, *thos'to* (*thophto*) to take out, *tosto* (*tophto*), to reconcile, to unite; *lis'to*, to teach and to return; *pes'to*, to reap; *lás'to* (*lathto*), to take for another, &c. &c. N. B.—The intercalary *silibant* varies to *sh*, *ph* and English *th*. It is least obscure with the vowel *i*; most so with the vowels *á*, *ú* and *ó*.

8th.—Conjugation of transitives in *po*, not having a nasal (*n. ng. m*) before it.

The verb *top'*, to strike (*potius*, *tó*).†

Infinitive Mood.

Aff. *To'mung*,
Neg. *Máng to'mung*, } aoristic.

Gerunds.

Top'he,
Topnung,
Toptophá,
Topsinghe,
Topklen, } ut supra.

Participles.

To'vi,
Topta,
Toptang,
—
Verbal nouns.
Topchyáng,
Toplung,
Topsing, } ut supra.

Negatives of all by prefixed *máng*.

*Imperative.**Singular.**Dual.**Plural.*

Top'po.

Topchhe.

Tomne.

* *Kh* of *khisto* is a very peculiar sound verging upon a vague *th*, or hard *h* or Sanscrit *ksh*: *kh*, is hard Arabic, without the least vagueness.

† The root is properly *tó*, equal to *tá* vel *dá* of Chinese, Newári, Sontal and *thá*, the same aspirated, of Kuswar. The dubious adherence of the transitive sign, or *p*, is highly significant.

To'pochhe.
To'pome.

Dual and plural of object.

Do thou strike them two.
Do thou strike them all.

Negatives.

Thá top'.
Thá topchhik.
Thá top'me.

Thá topchhe.
Kill not them two.
Kill not them all.

Thá topne.

Indicative present.

1. To'mi*

{ + Topchhokmi, excl. + } To' popmi, excl.
{ + Topchhikmi, incl. + } To' pem, incl.

Dual and plural of object.

{ 1. Tomchhem.
1. Tomem.
2. To'mi.

I strike them two.
I strike them all.

+Topchhikmi. +Topnem.

Dual and plural of object.

{ 2. Topchhikmi.
2. To'mem.
3. +To'mi.†

Thou strik'st them two.
Thou strik'st them all.

+Topchhikmi. +To'mem.

Dual and plural of object.

{ 3. +To'pchhikmi.
3. +To'mem.

He strikes them two.
He strikes them all.

Preterite.

1. To'pungmi,

{ + Topchhongmi, excl. } +To'pikongmi, excl.
{ + Topchhingmi, incl. } +To'pikengmi, incl.

Dual and Plural of object.

{ 1. To'pungchhem.
1. To'pungmem.
2. To'pum.

I struck them two.
I struck them all.

+Topchhem. +Tomnem.

Dual and plural of object.

{ 2. To'pochhem.
2. To'pomem.
3. +To'pum.

Thou struck'st them two.
Thou struck'st them all.

+To'pochhem. +To'pomem.

Dual and plural of object.

{ 3. +To'pochhem.
3. +To'pomem.

He struck them two.
He struck them all.

Negative by prefixed má.

Optative mood by conjugating the verb to desire suffixed to the unchanging form top' of the main verb.

* It is noticeable very that the verbs in po have no mark of the first person singular of present tense, so generally contradistinguished from the 2nd and 3rd, or all other persons. Even Newari preserves this distinction, dáye, dáyu, (in the past dáya, dála, dála).

† Tomi with the prolonged tone instead of the abrupt one, means he places. whereas to'mi, is he hits. The former comes from táko = place; the latter from to'po = hit.

*Interrogative Mood.**Present.*

1. Tom' ki má.
2. +Top' ki má.
3. +Top' ki má.

Preterite.

- To'pung ki má,
- To'po ki má,
- +To'po ki má,

} &c. by dropping the mi or
m final and substituting ki
má.

Subjunctive by substituting nam in present and phen in past for the interrogative ki má.

*Potential Mood.**Present and Past (Aoristic).*

1. Top wontungmi,
2. Top wontum.
3. +Top wontum,

} &c. as in Háto and Sishto potentials.

*Precative Mood.**Present.*

1. Tom yu.
2. +Top yu.
3. +Top yu.

Past.

1. To' pungyu.
2. To' poyu.
3. +To' poyu.

} &c. &c.

*Continuative Mood.**Present tense.*

1. Top ná top nognom,
2. Top ná top nouum,
3. Top ná top nomi,

} *and so on, conjugating the auxiliary verb
nó after the manner of phi, in dual and
plural.

*Reciprocal Mood.**Present.*

1. Top ná top pánchezmi,
2. Top ná top pánchez.
3. Top ná top pánchez.

} and so on, conjugating pánchez after the model
of imche.

Causal Verb.

As before in all respects. See prior samples.
Cause to strike, top'pingko (see trans. "inkó").

PASSIVE VERB.

*Imperative Mood.**Singular.*

Top sung
= Hit me.

Dual.

Top chhong
= Hit us two.

Plural.

To'pi kong
= Hit us all.

* Top ná top muschungmi (from musche, to sit) may also be used, = dáya chona of Newári. So also the reciprocal can be expressed by top ná top pángmi or the transitive which moreover is apt to blend in sense with the continuative. So also you can express the habitual present tense by to' vi nognom, literally I am the striker.

Top sungchhe.
Top sungne.

Dual and plural of agent.

Hit me ye two.
Hit me ye all.

Negatives.

Thá topmo.
Thá topmochhe.
Thá topmone.

Thá topchhok.
Hit me not ye two.
Hit me not ye all.

Thá to'pok.

Indicative Mood.

Singular.

Dual.

Plural.

- | | | |
|---|--|--|
| 1. To' mum = hits me (suban- di, he). | } +Top chhokmi, excl. +Top chhikmi, incl. = hits us two. | } +To' popmi, excl. +To' pem, incl. = hits us all. |
|---|--|--|

Dual and plural of agent.

- { 1. To' mochhem.
1. To' momem.
2. +To' mi.

They two (and ye two) hit me.
They all hit me.

+Top chhikmi. +Top nem.

Dual and plural of agent.

- { 2. To' mi.
2. To' mi.
3. +To' mi.

They two (and we two) hit thee.
They all (and we all) hit thee.

+Top chhikmi. +Topmem.

Dual and plural of agent.

- { 3. +Top chhikmi.
3. +Top mem.

They two (and ye two) hit him.
They all hit him.

Preterite.

Singular.

Dual.

Plural.

Topsungmi.

- | | |
|---|--|
| { +Top chhongmi, excl. +To'p chhingmi, incl. | { +To'pi kong mi, excl. +To'pi keng mi, incl. |
|---|--|

Dual and plural of agent.

- { 1. Top sung chhem.
1. Top sung mem.
2. To' mi.

They two (or ye two) struck me.
They all struck me.

+Top chhem. +Tom nem.

N. B.—The brackets and the initial crosses (+) refer, as before explained to forms of the verb scarcely reconcileable with our ideas of conjugation and yet not easily separable from such as are so, and to forms common to the active and passive voices, see on for another view of the subject.

Dual and plural of agent.

- { 2. To' mi.
2. To' mi.
3. +To' pum.

They two (or we two) struck thee.
They all struck thee.

+To' pochhem. +To' pomem.

Dual and plural of agent.

- { 3. +To' pochhem.
3. +To' pomem.

They two struck him.
They all struck him.

A second form of passive is constructed from the past participle and the auxiliary verb, as aforementioned, thus—

- | | |
|-------------------|--|
| 1. Topta nognom,* | } &c. according to the model of sheer neuters (see phi). |
| 2. Topta nonum, | |
| 3. Topta nomi, | |

*Special Forms.**I.—I and thou.*

- | | | | |
|----|-------------|--|-------------|
| S. | Top num, | I (only) strike or will strike or struck thee. | } Aoristic. |
| D. | Topnochhem, | I (only) strike or struck you two. | |
| P. | Top nonem, | I (only) strike or struck you all. | |

II.—Thou and I.

- | | | | |
|-----|----------------|----------------------------------|-----------------------|
| S.γ | Top'mum. | Thou strik'st or wilt strike me. | } Present and Future. |
| D.γ | Top' mochhem. | Ye two strike or will strike me. | |
| P. | Top' monem. | Ye all strike or will strike me. | } Preterite |
| S.γ | Top sungmi. | Thou struckedst me. | |
| D. | Top sungchhem. | Ye two struck me. | |
| P. | Top sungnem. | Ye all struck me. | |

The optative passive is precisely similar to the optative active. The negative mood is formed, as before, by merely prefixing the particle of negation, or má.

*Interrogative Mood.**Present.**Preterite.*

- | | | |
|------------------|----------------|--|
| 1. To' mo ki má. | Topsung ki má. | } Dual and plural by dropping m or mi final and substituting the interrogative form. |
| 2. +Top ki má. | Tom ki má. | |
| 3. +Top ki má. | +To'po ki má. | |

Subjunctive mood by substituting nam and phen for ki má, according to tense.

*Potential Mood.**Present (or future).**Preterite.*

- | | | |
|-----------------|-------------------|--|
| 1. Top wongnom. | 1. Top wonsungmi, | } and so on, conjugating with the passive of wonto like the passive of háto. |
| 2. Top wonmi. | 2. Top wonmi, | |
| 3. +Top wontum. | 3. +Top wontum, | |

*Precative Mood.**Present.**Preterite.*

- | | | |
|--------------|-----------------|--|
| 1. To'mo yu. | 1. Top sung yu. | } Dual and plural as in the indicative, substituting yu for the final m or mi. |
| 2. +Top yu. | 2. Tom yu. | |
| 3. +Top yu. | 3. + To'po yu. | |

Causal Verb.

Formed as before with the passive of pingko added to top'. Top pinggnom, &c., Top pingsungmi, &c. Like the above paradigm of roots in 'po are conjugated also, chi'po, to defecate, wo'po, to shoot, i'po, to raise (make get up) du'po, to kindle, khi'po, to make rope, pi'po, to suck, po'po, to lick, yo'po, to take off, chho'po, to sharpen, and all others having no consonant but an abrupt tone (standing for truncated p) before the transitive sign.

9th.—Conjugation of transitives in po having a nasal (m. n. ng) before it.

* See prior note at Sishto. Here we have for Váyn to'vi nognom and topta nognom, = khas kutnya hon and kutyako hon and dáhma kha, dáya'hma kha, Newári.

Duat and plural of object.

- { 3. + Homchhikmi.
 { 3. + Hommeu.

He tastes them two.

He tastes them all.

Preterite.

1. Hom pungmi

{ + Hom chhongmi, excl.
 { + Hom chhingmi, incl.

{ + Hompi kongmi, excl.
 { + Hompi kengmi, incl.

Duat and plural of object.

- { 1. Hom pungchhem.
 { 1. Hom pungmem.
 2. Hom pum.

{ I tasted them two.

{ I tasted them all.

+ Hom chhem.

+ Hom nem.

Duat and plural of object.

- { 2. Hom pochhem.
 { 2. Hom pomem.
 3. + Hom pum.

{ Thou tastedst them two.

{ Thou tastedst them all.

+ Hom pochhem.

+ Hom pomem.

Dual and plural of object.

- { + Hom pochhem.
 { + Hom pomem.

{ He tasted them two.

{ He tasted them all.

Negative mood by prefixed má.

Optative mood by conjugation of the verb dák suffixed to the root (hom) of the main verb Hom dák gnom, &c.

Interrogative mood by dropping final mi or m and substituting the interrogation form ki má, thus—

*Present.**Preterite.*

1. Hom sung ki má.

Hom pung ki má.

2. + Hom kimá.

Hom po ki má.

3. + Hom kimá.

+ Hom po ki má.

Subjunctive mood by substituting nam in the present and phen in the past for ki má, thus hom sung nam, if I taste; hom pung phen, if I had tasted, &c.

Potential mood by conjugating the aoristic transitive wonto after the root hom.

*Precativ Mood.**Present.**Preterite.*

1. Hom sung yu.

Hom pung yu.

2. + Hom yu.

Hom po yu.

3. + Hom yu.

+ Hom po yu.

} thus merely substituting the
 } precativ particle for the in-
 } terrogative.

Continuative Mood.

Hom na hom noghom,

Hom na hom nonum,

Hom na hom nomi,

} &c. as before.

Reciprocal Mood.

Hom na hom páñchungmi,

Hom na hom páñchem,

Hom na hom páñchem,

} &c. as before.

Causal.

By conjugating the root hom with the causal verb pingko, as before.

PASSIVE.

*Imperative Mood.**Singular.*

Aff. Hom sung.
Neg. Thá hommo.

Dual.

Homchhong.
Thá homchhok.

Plural.

Hom pi kong.
Thá hom pok.

Dual and plural of agent.

Aff. Hom sungchhe.
Aff. Hom sungne.
Neg. Thá hommochhe.
Neg. Thá hommone.

Do ye two taste me.
Do ye all taste me.
Do ye two taste me not.
Do ye all taste me not.

*Indicative Mood.**Singular.*

1. Hom mum.

Dual.

{ Hom chhokmi, excl.
+ Hom chhikmi, incl.

Plural.

{ + Hom popmi, excl.
Hom pem, incl,

Dual and plural of agent.

{ 1. Hom mochhem.
1. Hom momem.

They two (or ye two) taste me.
They all taste me.

Singular.

2. + Hommi.

Dual.

+ Hom chhikmi.

Plural.

+ Homnem.

Dual and plural of agent.

{ 2. Hommi.
2. Hommi.
3. + Hommi.
3. + Hom chhikmi,
3. + Hom mem.

They two (and we two) taste thee.
They all (and we two) taste thee.
+ Hom chhikmi. + Hommem.
They two (and ye) taste him.
They all taste him.

Preterite.

1. Hom sungmi.

{ + Hom chhong mi, excl.
Hom chhing mi, incl.

{ + Hompi kongmi, excl.
+ Hompi kengmi, incl.

Dual and plural of agent.

{ 1. Hom sungchhem.
1. Hom sungmem.
2. Hommi.

They two (or ye two) tasted me.
They all tasted me.

+ Homchhem. + Homnem.

Dual and plural of agent.

{ 2. Hommi.
2. Hommi.
3. + Hompum.

They two (or we two) tasted thee.
They all (or we two) tasted thee.

+ Hom pochhem. + Hom pomem.

Dual and plural of agent.

{ 3. + Hom pochem.
3. + Hom pomem.

They two tasted him.
They all tasted them.

2nd form of the passive.

Hompta nognom,
Hompta nonum,
Hompta nomi,

} &c. as before throughout the auxiliary verb.

Special Forms.

I.—I and thou.

| | | | |
|----|-------------|--|-------------|
| S. | Homnum. | I (only) taste or will taste or did taste thee | } Aoristic. |
| D. | Hom nochem. | I (only) taste or tasted you two. | |
| P. | Hom nonem. | I (only) taste or tasted you all. | |

II.—Thou and I.

| | | | |
|-----|--------------|--|-----------------------|
| S.γ | Hommum. | Thou (or he) tast'st or wilt taste me. | } Present and Future. |
| D.γ | Hom mochhem. | Ye two (or they two) taste &c. or will taste me. | |
| P. | Hom monem. | Ye all taste or will taste me. | |

Preterite.

| | | | |
|-----|----------------|---------------------------------|--------------|
| S.γ | Hom sungmi.* | Thou (or he) tasted'st me. | } Preterite. |
| D.γ | Hom sungchhem. | Ye two (or they two) tasted me. | |
| P. | Hom sungnem. | Ye all (only) tasted me. | |

Negative Mood.

Is formed, as in active voice, merely by prefixing the privative particle má.

Optative Mood.

Concurs with the same in the active voice, dák having an active and passive sense, and the neuter form dakgnom being also the passive form, dakgnom I desire or am desired; the latter sense transferred to root. With the synonymous verb yot', to like, the voices can be distinguished, yosto being the active transitive and yosung the passive, hence we have as optative active and passive.

*Active voice.**Passive voice.*

| | | | |
|-------------------|------------------|-------------------|------------------|
| 1. Hom yonmi. | } Present tense. | 1. Hom yotgnom. | } Present tense. |
| 2. Hom yotmi. | | 2. Hom yonmi. | |
| 3. Hom yotmi. | | 3. Hom yostum. | |
| 1. Hom yostungmi. | } Preterite. | 1. Hom yossungmi. | } Preterite. |
| 2. Hom yostum. | | 2. Hom yonmi. | |
| 3. Hom yostum, | | 3. Hom yostum. | |

Interrogative Mood.

Simply by dropping m or mi final and substituting ki má.

Subjunctive Mood.

Simply by dropping the mi or m and substituting nam for present and phen for past tense, Hommonam : Homsungphen, &c.

Potential Mood.

By conjugating the passive of wonto, as before, added to the root hom.

Precativè Mood.

By dropping the final m or mi, and substituting yu : Hommo yu : Homsung yu, &c.

* The mark γ placed before some of these forms indicates that they are included in the more ordinary forms of conjugation. They are repeated here for illustration. The change of sense in dual and plural of preterite shows, in conjunction with the whole system of conjugation, how restive the language is under these trammels.

Causal Mood.

As before by pingko added to the root.

Thus are conjugated, námpo, to smell; thámpo, to lose; kthumpo, to bury; hempo, to cause to sleep; hámpo, to spread; and all similar words. So also are conjugated all transitives in ko having a nasal before them (n or ng) as pingko, to send; chípko, to spin and to fill; punko, to weave; hópko, to uncover; honko, to obey; chhupko, to cleanse; túpko, to drink spirits and to cherish; sunko, to dry at fire—only that the terminations dependant on the transitive change with that sign, and as hompo makes hompopmi hompem, so pingko makes pingkokmi pingkem.

10th.—Conjugation of transitives in ko not having any consonant between the sign and the root.

The verb Tá, to place.

Infinitive Mood.

Aff. Támung. } Aoristic.
Neg. Máng támung.

Gerunds.

Táhe, }
Tánung, } ut supra.
Tátáhá,
Tásinghe,
Tákhen,

Participles.

Tovi, }
Totá, } ut supra.
Totáng,
Verbal nouns.
Táchyáng, }
Tálung, } ut supra.
Tásing,

Negatives of all by máng prefixed.

*Imperative Mood.**Singular.*

Aff. Táko.
Neg. Thá to.

Dual.

Táchhe.
Thá tochhe.

Plural.

Táne.
Thá tone.

Dual and Plural of Object.

Tákoche.
Takome.

Put down those two.
Put down them all.

Negative.

Thá tochhik.
Thá tome.

Put not down them two.
Put not down them all.

*Indicative Mood.**Singular.*

1. Tángmi.*

Dual.

{ Tá chhokmi, excl.
{ Tá chhikmi, incl.

Plural.

{ Tákokmi.
{ Tákem.

Dual and Plural of Object.

{ 1. Tángchhem.
{ 1. Tángmem.
2. +Tomi.

I put down them two.
I put down them all.
+Tochhikmi.

+Tonem.

* Also Tovi nognom, as elsewhere explained.

Dual and Plural of Object.

| | | |
|-----------------|---------------------------|---------|
| { 2. Tochhikmi. | Thou putst down them two. | |
| { 2. Tomem. | Thou putst down them all. | |
| 3. +Tomi. | +Tochhikmi. | +Tomem. |

Dual and Plural of Object.

| | |
|------------------|------------------------|
| { 3. +Tochhikmi. | He puts down them two. |
| { 3. +Tomem. | He puts down them all. |

*Preterite.**Singular.**Dual.**Plural.*

1. Tákungmi.

{ Tá chhongmi.
 { Tá chhingmi.

{ Tákikongmi.
 { Tákikengmi.

Dual and Plural of Object.

| | | |
|-------------------|--------------------|--------|
| { 1. Tákungchhem. | I placed them two. | |
| { 1. Tákungmem. | I placed them all. | |
| 2. Tákum. | Táchhem. | Tánem. |

Dual and Plural of Object.

| | | |
|-----------------|----------------------------|-----------|
| { 2. Tákochhem. | Thou put'st down them two. | |
| { 2. Tákomem. | Thou put'st down them all. | |
| 3. +Tákum. | +Tákochhem. | +Tákomem. |

Dual and Plural of Object.

| | |
|-------------------|-----------------------|
| { + 3. Tákochhem. | He put down them two. |
| { + 3. Tákomem. | He put down them all. |

Negative mood by prefixed má.

Optative mood by dak conjugated after the tá root, as before given.

Interrogative mood by cutting off final mi or m and substituting the querying formula ki má.

Subjunctive mood by like truncation and substitution of nam for present and phen for past tense.

Potential mood by conjugating wonto after the root tá.

Precative by the immutable particle yu substituted for final mi, m.

Causal by conjugating pingko added to root.

Continuative Mood.

| | |
|--------------------|--|
| 1. Tá natá nognom. | } and so on, conjugating the substantive verb nó, to be after the model of phi to come and prefixing the iterated root with na interposed. |
| 2. Tá natá nonum. | |
| 3. Tá natá nomi. | |

*Reciprocal Mood.**Singular.**Dual.**Plural.*

| | | |
|------------------------|--|--|
| 1. Tá natá pánchungmi. | { Tá natá pánachhokmi. { Tá natá pánachhikmi. | { Tá natá páchikokmi. { Tá natá páchikem. |
| 2. Tá natá pánchem. | Tá natá pánachhikmi. | Tá natá páchinem. |
| 2. Tá natá pánchem. | Tá natá pánachhikmi. | Tá natá páchimem. |

And so on for the preterite after the model of imche and all reflex verbs in che. This is formed by the reflex of the verb pá to do, which is pánche added to the iterated root as before. The construction ad sensum, which is the chief rule of this tongue, restricts the reciprocal mood in use to the dual and plural.

PASSIVE VOICE.

Imperative Mood.

| <i>Singular.</i> | <i>Dual.</i> | <i>Plural.</i> |
|------------------|--------------|----------------|
| Aff. Tosung. | Tochhong. | Tokikong. |
| Neg. Thá toгно. | Thá toчhok. | Thá tokok. |

Dual and plural of agent.

| | | |
|---|--|--|
| Aff. { Tosungchhe. Tosungne. | Do ye two place me. Do ye all place me. | |
| Neg. { Thá tosungchhe. Thá tosungne. | } Place me not, ye two, ye all. | |

Indicative Mood.

| <i>Singular.</i> | <i>Dual.</i> | <i>Plural.</i> |
|------------------|----------------------------|----------------------------------|
| Togном. | { Tochhokmi. Tochbikmi. | { Tokokmi, excl. Tokem, incl. |

Dual and plural of agent.

| | | |
|--|---|---------|
| { 1. Tognochhem. 1. Togномem. 2. + Tomi. | They (or ye) two place me. They all place me. +Tochbikmi. | +Tonem. |
|--|---|---------|

Dual and plural of agent.

| | | |
|--------------------------------------|---|---------|
| { 2. Tomi. 2. Tomi. 3. + Tomi. | They two (and we) place thee. They all (and we) place thee. +Tochbikmi. | +Tomem. |
|--------------------------------------|---|---------|

Dual and plural of agent.

| | | |
|--------------------------------|---|--|
| { + 3. Tochbikmi. 3. Tomem. | They two (and ye) place him. They all place him. | |
|--------------------------------|---|--|

Preterite.

| | | |
|--------------|------------------------------|--|
| 1. Tosungmi. | { Tochhongmi. Tochhingmi. | { Tokikongmi, excl. Tokikengmi, incl. |
|--------------|------------------------------|--|

Dual and plural of agent.

| | | |
|--|--|--------|
| { 1. Tosungchhem. 1. Tosungmem. 2. Tomi. | They two (or ye) placed me. They all placed me. Tochhem. | Tonem. |
|--|--|--------|

Dual and plural of agent.

| | | |
|---------------------------------------|---|-----------|
| { 2. Tomi. 2. Tomi. 3. + Takum. | They two (or we) placed thee. They all (or we) placed thee. +Takochhem. | +Takomem. |
|---------------------------------------|---|-----------|

Dual and plural of agent.

| | | |
|---------------------------------|--|--|
| 3. + Tákoчhem. 3. + Takomem. | They two (or ye) placed him. They all placed him. | |
|---------------------------------|--|--|

2nd form of the passive.

| | |
|---|------------------|
| 1 Tota nogном, 2 Tota nomum, 3 Tota nomi, | } &c. as before. |
|---|------------------|

Special forms.

I.—I to thee.

| | | | |
|----|------------|--|-------------|
| S. | Tonum. | I (only) placed or will place thee. | } Aoristic. |
| D. | Tonochhem. | I (only) placed or will place you two. | |
| P. | Tononem. | I (only) placed or will place you all. | |

II.—Thou to me.

| | | | |
|------|-------------|--------------------------------|-----------------------------|
| S. γ | Tognom. | Thou (or he) placest &c. me. | } Present and Future. |
| D. γ | Tognochhem. | Ye two (or they two) place me. | |
| P. | Tognonem. | Ye all (only) place me. | |

Preterite.

| | | | |
|------|--------------|---------------------------------|--------------|
| S. γ | Tosungmi. | Thou (or he) placed me. | } Preterite. |
| D. γ | Tosungchhem. | Ye two (or they two) placed me. | |
| P. | Tosnugnem. | Ye all placed me. | |

Negative Mood.

By prefixing má merely.

Optative Mood.

Tá dakgnom, &c. as in active voice.

Tá ping dakgnom (the last as a neuter) seems to be more correct, but is eschewed, though dakgnom, if allowed to be a passive, could hardly (one would suppose) create the passive sense in the main verb in either form of this mood.

Interrogative Mood.

| | | |
|--------------|---------------|---|
| Togno ki má. | Tosung ki má, | } and so on, dropping the final m, mi and substituting the interrogative ki má. |
| To ki má. | To ki má, | |
| +To ki má. | +Táko ki má, | |

Subjunctive Mood.

As in the interrogative but substituting nam in present and phen in past tense for the interrogatory form.

Potential Mood.

| | |
|--------------|---|
| Tá won gnom, | } &c., like the passive of háto aforegone. Here also the passive sense lost in the truncated root is trans- ferred to the secondary verb. Taping wonchungmi, I am able to be put down, is also admissible. |
| Tá won mi, | |
| +Tá wontum, | |

Causal Mood.

| | | |
|--------------------------------------|---|--|
| Tá ping chungmi. | } Tá ping gnom, | } &c., by the reflex or passive causal of pingko conju- gated like imche and hompó, respectively. |
| Tá ping chem. | | |
| Tá ping chem. | | |
| I am put down by my own will, &c. | I am set down by an- other's will, &c. | |

Continuative Mood.

| | |
|-----------------|---|
| Tá natá pognom, | } &c., the iterated root conjugated with the passive of the verb pá, to do, which agrees with tá, to place. |
| Tá natá pomi, | |
| Tá natá pomi. | |

Thus are conjugated jáko, to eat, páko, to make, Tháko, to hear, Náko, to kindle, Chháko, to loosen, Chhuko, to seize, Doko, to catch, Khiko, to hide, Duko, to dig, Seko, to understand, Reko and Guko, to lift up, Khoko, to cook, Boko, to dry and all others having a nude root before the ko sign. But observe

that táko, jáko and páko change their á into ó as in the aforegone paradigm, whereas the rest suffer no such alteration. All alike take a half nasal before the intransitive sign che. It has already been remarked that transitives in "ko" having a nasal before the sign, as pingko (potius pingko) to send, are conjugated like transitives in po with a similarly placed nasal. But as pingko is the great former of causatives I give it, before closing the conjugations, observing by the way that the root ping, which is merely nasalized pi, seems to explain the Dravirian causative sign.

Imperative.

| <i>Singular.</i> | <i>Dual.</i> | <i>Plural.</i> |
|----------------------|---------------|----------------|
| Aff. Pingko (Pínko). | Pingchhe. | Pingne. |
| Neg. Thá ping. | Thá pingchhe. | Thá pingne. |

Dual and plural of object.

| | |
|-----------------------|------------------------|
| Aff. { Pingkochhe. | Do thou send them two. |
| { Pingkome. | Do thou send them all. |
| Neg. { Thá pingchhik. | Dual. |
| { Thá pingme. | Plural. |

Indicative present.

| <i>Singular.</i> | <i>Dual.</i> | <i>Plural.</i> |
|------------------|------------------------------------|------------------------------|
| 1. Pingsungmi. | { + Pingchhokmi. + Pingchhikmi. | { + Pingkokmi. + Pingkem. |

Dual and plural of object.

| | | |
|---------------------|------------------|------------|
| { 1. Pingsungchhem. | I send them two. | |
| { 1. Pingsungmem. | I send them all. | |
| 2. + Pingmi. | + Pingchhikmi. | + Pingnem. |

Dual and plural of object.

| | | |
|-------------------|------------------------|------------|
| { 2. Pingchhikmi. | Thou send'st them two. | |
| { 2. Pingmem. | Thou send'st them all. | |
| 3. + Pingmi. | + Pingchhikmi. | + Pingmem. |

Dual and plural of object.

| | |
|---------------------|--------------------|
| { 3. + Pingchhikmi. | He sends them two. |
| { 3. + Pingmem. | He sends them all. |

Preterite.

| | | |
|----------------|--------------------------------------|------------------------------------|
| 1. Pingkungmi. | { + Pingchhongmi. + Pingchhingmi. | { Pingkikongmi. + Pingkikengmi. |
|----------------|--------------------------------------|------------------------------------|

Dual and plural of object.

| | | |
|---------------------|------------------|------------|
| { 1. Pingkungchhem. | I sent them two. | |
| { 1. Pingkungmem. | I sent them all. | |
| 2. Pingkum. | + Pingchhem. | + Pingnem. |

Dual and plural of object.

| | | |
|-------------------|-------------------------|--------------|
| { 2. Pingkochhem. | Thou send'est them two. | |
| { 2. Pingkomem. | Thou send'est them all. | |
| 3. + Pingkum. | + Pingkochhem. | + Pingkomem. |

Dual and plural of object.

| | |
|---------------------|-------------------|
| { + 3. Pingkochhem. | He sent them two. |
| { + 3. Pingkomem. | He sent them all. |

PASSIVE VOICE.

Imperative Mood.

Aff. Pinsung.
Neg. Thá pinggno.

Pingchhong.
Thá pingchhok,

Pingkikong.
Thá pingkok.

Dual and plural of agent.

Aff. { Pinsungchhe.
Pingsungne.
Neg. Thá pingsungchhe.

Do you two send me.
Do you all send me.
Thá pingsungne.

*Indicative Mood.**Present Tense.*

1. Pinggnom.

{ + Pingchhokmi.
+ Pingchhikmi.

{ + Pingkokmi.
+ Pingkem.

Dual and plural of agent.

{ 1. Pinggnochhem.
1. Pinggnomem.
2. + Pingmi.

They two send me.
They all send me.
+ Pingchhikmi.

+ Pingnem.

Dual and plural of agent.

{ 2. Pingmi.
2. Pingmi.
3. + Pingmi.

They two send thee.
They all send thee.
+ Pingchhikmi.

+ Pingmem.

Dual and plural of agent.

{ + 3. Pingchhikmi.
+ 3. Pingmem.

They two send him.
They all send him.

Preterite.

1. Pingsungmi.

{ + Pingchhongmi.
+ Pingchhingmi.

{ + Pingkikongmi.
+ Pingkikengmi.

Dual and plural of agent.

{ 1. Pingsungchhem.
1. Pingsungmem.
2. Pingmi.

They two sent me.
They all sent me.
+ Pingchhem.

+ Pinguem.

Dual and plural of agent.

{ 2. Pingmi.
2. Pingmi.
3. + Pingkum.

They two sent thee.
They all sent thee.
+ Pingkochhem.

+ Pingkomem.

Dual and plural of agent.

{ 3. Pingkochhem.
+ 3. Pingkomem.

They two sent him.
They all sent him.

11.—Conjugation of transitives in “ko” having an abrupt tone (equal iterate sign) between the sign and the root.

The verb Phó, to beget, or give birth to.

Infinitive Mood.

Aff. Phok mung.
Neg. Mang phokmung.

Gerunds.

Phokhe.
Phoknung, &c.

Participles.

Phokvi.
Phokta, &c.

Verbal nouns.

Phokchyáng.
Phoklung.
Phoksing, &c.

Imperative Mood.

Aff. Pho'ko.
Neg. Thá pho'ko.

Phokchhe.
Thá phokchhe.

Phongne.
Thá phokne.

Dual and plural of object.

Aff. { Pho'kochhe.
 { Pho'kome.
Neg. { Thá phokchhik.
 { Thá phokme.

Do thou beget two.
Do thou beget all.
Do not beget two.
Do not beget all.

*Indicative Mood.**Singular.*

1. Phongmi.

Dual.

Phokchhokmi, excl.
Phokchhikmi, incl.

Plural.

Phokkokmi, excl.
Phokkem, incl.

Dual and plural of object.

{ 1. Phongchhem.
 { 1. Phongmem.
 2. Phokmi.

I beget them two.
I beget them all.
Phokchhikmi.

Phoknem.

Dual and plural of object.

{ 2. Phokchhikmi.
 { 2. Phokmem.
 3. Phokmi.

Thou begett'st them two.
Thou begett'st them all.
Phokchhikmi.

Phokmem.

Dual and plural of object.

{ 3. Phokchhikmi.
 { 3. Phokmem.

He begets them two.
He begets them all.

Preterite.

1. Pho'kungmi.

{ Phokchhongmi, excl.
 { Phokchlingmi, incl.

{ Phokikongmi, excl.
 { Phokikengmi, incl.

Dual and plural of object.

{ 1. Pho'kungchhem.
 { 1. Pho'kungmem.
 2. Pho'kum.

I begot two.
I begot all.
Phokchhem.

Phongnem.

Dual and plural of object.

{ 2. Phokochem.
 { 2. Phokomem.
 3. Pho'kum.

Thou begott'st two.
Thou begott'st all.
Phokochem.

Phokomem.

Dual and plural of object.

{ 3. Phokochem.
 { 3. Phokomem.

He begot two.
He begot all.

Reciprocal continuative, &c. compound with phok and the verbs nó and pánche as before.

Passive Voice.

No infinitive or participles save in the causal form phokpingmung, phokpinghe, phokpingvi, &c.

Imperative Mood.

| <i>Singular.</i> | <i>Dual.</i> | <i>Plural.</i> |
|-------------------|----------------|----------------|
| Aff. Phoksung. | Phokchhong. | Pho'kikong. |
| Neg. Thá phokgno. | Thá phokchnek. | Thá pho'kok. |

Dual and plural of agent.

| | | |
|--------|-------------------|---------------------|
| Aff. { | Phoksungchhe. | Do ye two beget me. |
| | Phoksungne. | Do ye all beget me. |
| Neg. { | Thá phoksungchhe. | |
| | Thá phoksungne. | |

Indicative Mood.

| <i>Singular.</i> | } | Dual and plural and agent-objective as in the last conjugation, only substituting phok for tó, of which the latter shows the tá root, internally modified and the former, the iterate transitive sign, elsewhere suppressed, here brought forward, for phok-gnom and phongmi both depend on pho'-ko being really phok-ko. |
|-------------------|---|---|
| 1. Phokgnom. | | |
| 2. Phokmi. | | |
| 3. Phokmi. | | |
| <i>Preterite.</i> | | |
| 1. Phoksungmi. | | |
| 2. Phongni. | | |
| 3. Phongmi. | | |

Thus are conjugated tá'ko, to decorticate, kho'ko, to crook, pu'ko, to awaken, chi'ko, to bite, ne'ko, to give rest, lu'ko, to choose, li'ko, to lay down or throw down, cha'ko, to put upon, to make come up, ye'ko, to shear or clear the ground for cultivation, chho'ko, to sow, po'ko, to weigh or measure, chu'ko, to plane wood, lo'ko, to turn over, &c. Observe that in all these the latent iterate sign of the imperative whose presence is only indicated by the abrupt tone (ta'ko) is preserved in the conjugation, whence from a common crude, or tá to place and to decorticate, comes all the difference of tángmi, tomi, tomi and tángmi takmi, takmi in the indicative, whilst in the preterite there is only the difference of the abrupt accent, tákungmi, tákun, tákum, and ta'kungmi, ta'kum, ta'kum. The change of vowel is confined to the three verbs tako, jako and pako. All other transitives in "ko" conjugated from the sheer root as Sé-ko, understand it, follow the paradigm of táko, less that change of vowel; as imperative Se-ko, Se-chhe, Se-ne, indicative, séngmi, sémi, sémi, &c. Compare with the transitives in 'ko as above those in 'po, as to'po aforegone. Both follow the Dravirian rule of iteration only disguised for the sake of euphony.

12th.—Conjugation (of Irregulars).

Lá, to go.

Imperative Mood.

| <i>Singular.</i> | <i>Dual.</i> | <i>Plural.</i> |
|------------------|---------------|----------------|
| Aff. Lá'la. | Lá'chhe. | Láne. |
| Neg. Thá lá'la. | Thá lá'chhik* | Thá láne. |

Indicative Mood.

| <i>Singular.</i> | <i>Dual.</i> | <i>Plural.</i> |
|------------------|---------------|----------------|
| 1. Láguom. | { Lá'chhokmi. | { Lá'kokmi. |
| | { Lá'chhukmi. | { Lá'kem. |
| 2. Lá'lam. | Lá'chhukmi. | Láuem. |
| 3. Lá'lam. | Lá'chhukmi. | Láuem. |

* See first conjugation of neuters conjugated from the crude root.

Preterite.

| | | |
|---------------|----------------------|----------------------|
| 1. Lá'sungmi. | { Lá'chhongmi, excl. | { Lá'kikongmi, excl. |
| 2. Lá'lam. | { Lá'chhingmi, incl. | { Lá'kikengmi, incl. |
| 3. Lá'lam. | Lá'chhem. | Lánem. |
| | Lá'chhem. | Lámém. |

13th.—Conjugation (of Irregulars).

Nó, to be.

Present Indicative Singular.

| | | |
|-----------------|---|--|
| 1. Nógnom. | { | The residue is quite regular (see 1st conjugation) as also in the above verb, and indeed the dual and plural of all verbs whatever are nearly immutable, as will have been seen. |
| 2. Nónum. | | |
| 3. Nómi or Nóm. | | |

Remark.—Both the above have an abrupt tone or obscure t' before the gerund, participle and verbal noun signs, as lat'he; not'he; lat'lat'ha, not'not'ha; lat'vi, not'vi; la'ta, no'ta, also in the infinitive, lat'mung, not'mung.

14th and 15th.—Conjugations (of Irregulars), being those of the verb lá, to go, as used in combination with other verbs.

I.—With transitives as top', to beat

II.—With nenters, as im, to sleep.

*Indicative present singular.**Indicative present singular.*

| | | | | | |
|-------------------|---|--|-------------------|---|---|
| 1. Top lángmi. | { | Dual and plural, as in the uncombined verb lagnom, &c. | 1. Im lagnom. | { | Dual and plural are in the separate verb. |
| 2. Top lam. | | | 2. Im lam. | | |
| 3. Top lam. | | | 3. Im lam. | | |
| <i>Preterite.</i> | { | | <i>Preterite.</i> | { | |
| 1. Top lasungmi. | | | 1. Im la sungmi. | | |
| 2. Top lam. | | | 2. Im lam. | | |
| 3. Toplachem. | | | 3. Im lam. | | |

Imperative.

Topla.

Imla.

Remark.—In every conjunction of verbs the 1st loses the infinitive sign, and is used in the crude state, whence the peculiar transfer of passive expression to the subordinate verb, as before illustrated. But to this, háto in the sense of let, is an exception, thus, let me strike, is topmung hasung, and topmung hánun, I let thee strike.

The above fifteen conjugations with their accessories (see bracketed portions) exhibit the whole scope of Váyu conjugation. But a reference to them will show that it has been necessary, whilst striving to accommodate our forms to the genius of this language, to interpolate into the transitives certain forms expressive of both agent and object, and likewise to append to the passive certain other forms which have been necessarily set apart from all the conjugations; not to mention the perpetual coincidence of active and passive forms. It may now be of use to exhibit the whole matter of conjugation in another shape seemingly more accommodated to the genius of the language, and which, though exhibiting a deal of repetition, will be found convenient for comparisons when we proceed to the Kuránti language, a language still richer than the Váyu tongue, in pronominal combinations with the verb and wherein consequently many of the mere iterations of the following diagram will take distinct shapes; whence we may infer that decomposition has proceeded a good deal further in the Váyu language than in the Kuránti tongue.

The verb *já*, to eat.

Imperative Mood.

Singular.

- | | | |
|-----------|---|--|
| Eat thou. | { | 1. <i>Jánche</i> , self, as agent or object, eat simply. |
| | | 2. <i>Jáko</i> , It or him. |
| | | 3. <i>Játo</i> , his or for him. |
| | | 4. <i>Jákoche</i> , them two. |
| | | 5. <i>Játoche</i> , their two. |
| | | 6. <i>Jákome</i> , them all. |
| | | 7. <i>Játome</i> , their all. |
| | | 8. <i>Jósung</i> , me. |
| | | 9. <i>Jásung</i> , mine. |
| | | 10. <i>Jóchung</i> , us two. |
| | | 11. <i>Jáchhung</i> , our two. |
| | | 12. <i>Jókikong</i> , us all. |
| | | 13. <i>Jákikong</i> , our all. |

Dual.

- | | | |
|-------------|---|----------------------------------|
| Ye two eat. | { | 1. <i>Jánache</i> , selves. |
| | | 2. <i>Jáchhe</i> , it. |
| | | 3. <i>Jáchhe</i> , his, for him. |
| | | 4. <i>Jáchhe</i> , them two. |
| | | 5. <i>Jáchhe</i> , their two. |
| | | 6. <i>Jáchhe</i> , them all. |
| | | 7. <i>Jáchhe</i> , their all. |
| | | 8. <i>Jósungche</i> , me. |
| | | 9. <i>Jásungche</i> , mine. |
| | | 10. <i>Jóchung</i> , us two. |
| | | 11. <i>Jáchhung</i> , our two. |
| | | 12. <i>Jókikong</i> , us all. |
| | | 13. <i>Jákikong</i> , our all. |

Plural.

- | | | |
|-------------|---|--|
| Ye all eat. | { | 1. <i>Jánchine</i> , selves or simple action (functional). |
| | | 2. <i>Jáne</i> , it. |
| | | 3. <i>Jáne</i> , his, or for him. |
| | | 4. <i>Jáne</i> , them two. |
| | | 5. <i>Jáne</i> , their two. |
| | | 6. <i>Jáne</i> , them all. |
| | | 7. <i>Jáne</i> , their all. |
| | | 8. <i>Jósungne</i> , me. |
| | | 9. <i>Jásungne</i> , mine. |
| | | 10. <i>Jóchung</i> , us two. |
| | | 11. <i>Jáchhung</i> , our two. |
| | | 12. <i>Jókikong</i> , us all. |
| | | 13. <i>Jákikong</i> , our all. |

*Indicative Mood.**Present and Future.**Singular.*

- | | | |
|--------------------|---|--|
| I eat or will eat. | { | 1. Jánchungmi, self, as agent or object. |
| | | 2. Jángmi, it, him. |
| | | 3. Játungmi, his or for him. |
| | | 4. Jángchhem, them two. |
| | | 5. Játungchhem, their two. |
| | | 6. Jángmem, them all. |
| | | 7. Játungmem, their all. |
| | | 8. Jónum, thee. |
| | | 9. Jánun, thine or for thee. |
| | | 10. Jónochhem, you two. |
| | | 11. Jánochhem, your two. |
| | | 12. Jónonem, you all. |
| | | 13. Jánonem, your all. |

Dual.

- | | | |
|----------------------------|---|---------------------------------------|
| We two eat or will eat. | { | 1. { Jánachokmi, excl. } selves. |
| | | 2. { Jánachhikmi, incl. } it. |
| | | 3. { Jáchhokmi, excl. } his, for him. |
| | | 4. { Jáchhikmi, incl. } them two. |
| | | 5. Jáchhokmi-chhikmi, their two. |
| | | 6. Jáchhokmi-chhikmi, them all. |
| | | 7. Jáchhokmi-chhikmi, their all. |
| | | 8. Jómi, thee. |
| | | 9. Jáchhokmi, thine. |
| | | 10. Jóchhikmi, you two. |
| | | 11. Jáchhokmi, your two. |
| | | 12. Jónem, you all. |
| | | 13. Jánem, your all. |

Plural.

- | | | |
|----------------------------|---|---------------------------------------|
| We all eat or will eat. | { | 1. { Jánchikokmi, excl. } selves. |
| | | 2. { Jáchikokmi, incl. } it. |
| | | 3. { Játikokmi, excl. } his, for him. |
| | | 4. { Játikem, incl. } them two. |
| | | 5. Játikokmi-kem, their two. |
| | | 6. Jákem, incl. } them all. |
| | | 7. Játikokmi-kem, their all. |
| | | 8. Jóm or Jókem, thee. |
| | | 9. Jákem, thine. |
| | | 10. Jókem, you two. |
| | | 11. Játikokmi, your two. |
| | | 12. Jónem or Jókem, you all. |
| | | 13. Jánem or Jákem, your all. |

Singular.

| | | |
|-----------------------------|---|----------------------------|
| Thou eat'st or wilt eat. | { | 1. Jánchhem, self. |
| | | 2. Jómi, it. |
| | | 3. Játum, his, or for him. |
| | | 4. Jóchhikmi, them two. |
| | | 5. Játochem, their two. |
| | | 6. Jómem, them all. |
| | | 7. Játomem, their all. |
| | | 8. Jognom, me. |
| | | 9. Jágnom, mine. |
| | | 10. Jóchhokmi, us two. |
| | | 11. Jómi, our two. |
| | | 12. Jókokmi, us all. |
| | | 13. Jákokmi, our all. |

Dual.

| | | |
|----------------------------|---|--------------------------|
| Ye two eat or will eat. | { | 1. Jánachhikmi, selves. |
| | | 2. Jóchhikmi, it. |
| | | 3. Jáchhikmi, his. |
| | | 4. Jóchhikmi, them two. |
| | | 5. Jáchhikmi, their two. |
| | | 6. Jóchhikmi, them all. |
| | | 7. Jáchhikmi, their all. |
| | | 8. Jónochhem, me. |
| | | 9. Jágnochhem, mine. |
| | | 10. Jóchhokmi, us two. |
| | | 11. Jáchhokmi, our two. |
| | | 12. Jókokmi, us all. |
| | | 13. Jákokmi, our all. |

Plural.

| | | |
|----------------------------|---|-------------------------|
| Ye all eat or will eat. | { | 1. Jánchinem, selves. |
| | | 2. Jonem, it. |
| | | 3. Janem, its, his. |
| | | 4. Jonem, them two. |
| | | 5. Janem, their two. |
| | | 6. Jonem, them all. |
| | | 7. Janem, their all. |
| | | 8. Jognonem, me. |
| | | 9. Jagnonem, mine. |
| | | 10. Jochhokmi, us two. |
| | | 11. Jáchhokmi, our two. |
| | | 12. Jokokmi, us all. |
| | | 13. Jákokmi, our all. |

Singular.

- | | | |
|----------------------|---|----------------------------------|
| He eats or will eat. | { | 1. Jánchhem, self. |
| | | 2. Jómi, it. |
| | | 3. Játum, his, for him. |
| | | 4. Jochhikmi, them two. |
| | | 5. Jatochhem, their two. |
| | | 6. Jomem, them all. |
| | | 7. Játomem, their all. |
| | | 8. Jómi, thee. |
| | | 9. Jómi, thine. |
| | | 10. Jochhikmi, you two. |
| | | 11. Jachhikmi, your two. |
| | | 12. Jonem, you all. |
| | | 13. Jomi, your all. |
| | | 14. Jognom, me. |
| | | 15. Jagnom, mine. |
| | | 16. { Jochhokmi, excl. } us two. |
| | | 17. Jáchhokmi-chhikmi, our two. |
| | | 18. Jokokmi-kem, us all. |
| | | 19. Jákokmi-kem, our all. |

Dual.

- | | | |
|---------------------------|---|----------------------------------|
| They two eat or will eat. | { | 1. Jánachhikmi, selves. |
| | | 2. Jochhikmi, it, him. |
| | | 3. Jatochhem, his, its. |
| | | 4. Jochhikmi, them two. |
| | | 5. Jatochhem, their two. |
| | | 6. Jochhikmi, them all. |
| | | 7. Játomem, their all. |
| | | 8. Jómi, thee. |
| | | 9. Jómi, thine. |
| | | 10. Jóchhik, you two. |
| | | 11. Jochhikmi, your two. |
| | | 12. Jonem, you all. |
| | | 13. Jochhikmi, your all. |
| | | 14. Jagnochhem, me. |
| | | 15. Jagnochhem, mine. |
| | | 16. { Jochhokmi, excl. } us two. |
| | | 17. Jáchhokmi-chhikmi, our two. |
| | | 18. Jokokmi-kem, us all. |
| | | 19. Jakokmi-kem, our all. |

Plural.

- | | | |
|---------------------------|---|--------------------------------|
| They all eat or will eat. | { | 1. Jánchimem, selves. |
| | | 2. Jomem, it. |
| | | 3. Játomem, his, its, for him. |
| | | 4. Jómem, them two. |
| | | 5. Játomem, their two. |
| | | 6. Jómem, them all. |
| | | 7. Játomem, their all. |
| | | 8. Jómi, thee. |
| | | 9. Jómi, thine. |
| | | 10. Jóchhikmi, you two. |

11. Játomem, your two.
12. Jonem or Jomem, you all.
13. Jánem or Jatomem, your all.
14. Jognomem, me.
15. Jagnomem, mine.
16. { Jochhokmi, excl. } us two.
 { Jochhikmi, incl. }
17. Jachhokmi-chhikmi, our two.
18. Jokokmi-kem, us all.
19. Jakokmi-kem, our all.

*Preterite Tense.**Singular.*

- | | | |
|--------|---|---|
| I ate. | { | 1. Jáchhungmi, self, own. |
| | | 2. Jákungmi, it, him. |
| | | 3. Játungmi, his, for him. |
| | | 4. Jákungchhem, them two. |
| | | 5. Játungchhem, their two, or for them two. |
| | | 6. Jákungmem, them all. |
| | | 7. Jatungmem, their all, or for them all. |
| | | 8. Jónum, thee. |
| | | 9. Jánum, thine, or for thee. |
| | | 10. Jónochhem, you two. |
| | | 11. Jánochhem, your two, or for you two. |
| | | 12. Jónonem, you all. |
| | | 13. Jánonem, your all, or for you all. |

Dual.

- | | | |
|-------------|---|---|
| We two ate. | { | 1. { Jánachhongmi, excl. } selves, own. { Jánachhingmi, incl. } |
| | | 2. { Jáchhongmi, excl. } it, him. { Jáchhingmi, incl. } |
| | | 3. { Jáchhongmi, excl. } his, for him. { Jáchingmi, incl. } |
| | | 4. { Jáchhongmi, excl. } them two. { Jáchhingmi, incl. } |
| | | 5. { Jáchhongmi, excl. } their two, or for them two. { Jáchhingmi, incl. } |
| | | 6. { Jáchhongmi, excl. } them all. { Jáchhingmi, incl. } |
| | | 7. { Jáchhongmi, excl. } their all, or for them all. { Jáchhingmi, incl. } |
| | | 8. Jómi, thee. |
| | | 9. Jáchhongmi, thine, for thee. |
| | | 10. Jóchhem, you two. |
| | | 11. Jáchhongmi, your two, or for you two. |
| | | 12. Jónem or Jáchhongmi, you all. |
| | | 13. Jánum or Jáchhongmi, your all, or for you all. |

Plural.

- We all ate. {
1. { Jánchhikongmi, excl. } selves, own.
 2. { Jákikongmi, excl. } it, him.
 3. { Játikongmi, excl. } its, his, for him.
 4. { Jákikongmi, excl. } them two.
 5. { Játikongmi, excl. } their two, or for them two.
 6. { Jákikongmi, excl. } them all.
 7. { Játikongmi, excl. } their all, or for them all.
 8. Jómi, thee.
 9. Jákikongmi, thine, or for thee.
 10. Jóchem or Jakikongmi, you two.
 11. Játikongmi, your two, for you two.
 12. Jónem, or Jákikongmi, you all.
 13. Jánem, or Játikongmi, your all, for you all.

Singular.

- Thou art or
didst eat. {
1. Jánchhem, self, own.
 2. Jákom, it, him.
 3. Játun, his, for him.
 4. Jákoehhem, them two.
 5. Játóehhem, their two, or for them two.
 6. Jákómem, them all.
 7. Játómem, their all, or for them all.
 8. Jósungmi, me.
 9. Jásungmi, mine, for me.
 10. Jóchungmi, us two.
 11. Jáchungmi, our two, or for us two.
 12. Jókikongmi, us all.
 13. Jákikongmi, our all, for us all.

Dual.

- Ye two ate. {
1. Jánáchhem, selves, own.
 2. Jáchhem, it, him.
 3. Jáchhem, its, his.
 4. Jáchhem, them two.
 5. Jáchhem, their two, for them two.
 6. Jáchhem, them all.
 7. Jáchhem, their all, for them all.
 8. Jósungchhem, me.
 9. Jásungchhem, mine, for me.
 10. Jóchhungmi, us two.
 11. Jáchhungmi, our two, for us two.
 12. Jókikongmi, us all.
 13. Jákikongmi, our all, for us all.

Plural.

Ye all ate.

- | | |
|---|--------------------------------------|
| { | 1. Jánchinem, selves, own. |
| | 2. Jánem, it, him. |
| | 3. Jánem, his, its. |
| | 4. Jánem, them two. |
| | 5. Jánem, their two, for them two. |
| | 6. Jánem, them all. |
| | 7. Jánem, their all, for them all. |
| | 8. Jósungnem, me. |
| | 9. Jásungnem, mine, for me. |
| | 10. Jóchhongmi, us two. |
| | 11. Jáchhongmi, our two, for us two. |
| | 12. Jókikongmi, us all. |
| | 13. Jákikongmi, our all, for us all. |

Singular.

They ate.

- | | |
|-------------------------------------|--|
| { | 1. Jánchhem, self, own. |
| | 2. Jákum, it, him. |
| | 3. Jatum, his, for him. |
| | 4. Jákochhem, them two. |
| | 5. Játochhem, their two, for them two. |
| | 6. Jákodem, them all. |
| | 7. Játomem, their all, for them all. |
| | 8. Josungmi, me. |
| | 9. Jásungmi, mine, for me. |
| | 10. { Jóchhongmi, excl. } us two. |
| | { Jóchhingmi, incl. } |
| | 11. { Jáchhongmi, excl. } our two, for us two. |
| | { Jáchhingmi, incl. } |
| | 12. { Jókikongmi, excl. } us all. |
| | { Jókikengmi, incl. } |
| | 13. { Jákikongmi, excl. } our all, for us all. |
| | { Jákikengmi, incl. } |
| | 14. Jóni, thee. |
| | 15. Jákum, thine. |
| 16. Jóchhem, you two. | |
| 17. Jáchhem, your two, for you two. | |
| 18. Jónem, you all. | |
| 19. Jáuem, your all, for you all. | |

Dual.

They two ate.

- | | |
|-----------------------|--|
| { | 1. Jánachhem, selves, own. |
| | 2. Jákochhem, it, him. |
| | 3. Játochhem, his, its. |
| | 4. Jákochhem, them two. |
| | 5. Játochhem, their two, for them two. |
| | 6. Jákochhem, them all. |
| | 7. Játochhem, their all, for them all. |
| | 8. Josungchhem, me. |
| | 9. Jásungchhem, mine. |
| | 10. { Jóchhongmi, excl. } us two. |
| { Jóchhingmi, incl. } | |

Continued,

Continuation,
They two ate.

- | | | |
|-----|--|----------------------|
| 11. | { Jáchhongmi, excl. Jáchhingmi, incl. } | our two, for us two. |
| 12. | { Jókikongmi, excl. Jókikengmi, incl. } | us all. |
| 13. | { Jákikongmi, excl. Jákikengmi, incl. } | our all, for us all. |
| 14. | Jómi, thee. | |
| 15. | { Jákum, Jákochhem. } | thine. |
| 16. | Jóchhem, you two. | |
| 17. | Jáchhem, your two, for you two. | |
| 18. | Jonem, you all. | |
| 19. | Jánem, your all, for you all. | |

Plural.

- | | | | | |
|---------------|---|-----|--|----------------------|
| They all ate. | { | 1. | Jánchimem, selves, own. | |
| | | 2. | Jákomem, it him. | |
| | | 3. | Játomem, his its. | |
| | | 4. | Jákomem, them two. | |
| | | 5. | Játomem, their two, for them two. | |
| | | 6. | Jákomem, them all. | |
| | | 7. | Játomem, their all, for them all. | |
| | | 8. | Josungmein, me. | |
| | | 9. | Jásungmem, mine. | |
| | | 10. | { Jochhongmi, excl. Jochhingmi, incl. } | us two. |
| | | 11. | { Jáchhongmi, excl. Jáchhingmi, incl. } | our two, for us two. |
| | | 12. | { Jókikongmi, excl. Jókikengmi, incl. } | us all. |
| | | 13. | { Jákikongmi, excl. Jákikengmi, incl. } | our all, for us all. |
| | | 14. | Jómi, thee. | |
| | | 15. | Jákum, Jákomem, thine. | |
| | | 16. | Jóchhem, you two. | |
| | | 17. | Jáchhem, your two, for you two. | |
| | | 18. | Jónem, you all. | |
| | | 19. | Jánem, your all, for you all. | |

Remark.—The whole of the above forms will by and by, be seen to exist distinctly in the Báhing dialect of Kiránti, and nearly all in the Bontáwa and Kháling dialects. In Váyu the principle is the same and many of the forms exist; wherefore we must conclude that the others have been lost; or shall we say that the process of development was staid in mid course? The more anomalies, the more instruction, and it is necessary to put so new and peculiar a matter in several lights in order to judge of it truly. So that instead of apologising for the above almost interminable details, I shall proceed to subjoin a comparison of Váyu and Quichna, the latter from Markham ut supra, cit.

Quichna.

Váyu.

I. I—thee.

S. I love thee, Munaiki.

P. I love you, Munaikichik.

S. I loved thee, Munarkaiki.

P. I loved you, Munarikichik.

Chhánum.

{ Chhánochhem, D.

{ Chhánonem, P.

Chhánum.

{ Chhánochhem, D.

{ Chhánonem, P.

II. He—thee.

| | |
|-----------------------------------|-----------------------------------|
| S. He loves thee, Munásunki. | Chhanmi. |
| P. He loves you, Munasunkichik. | { Chhánehhikmi, D. Chhánem, P. |
| S. He loved thee, Munasukanki. | Chhanmi. |
| P. He loved you, Munasukankichik. | { Chhánehhem, D. Chhánem, P. |

III. Thou—me.

| | |
|--|---|
| S. Thou lovest me, Munahuanki. | Chhángnom. |
| P. Thou lovest us, Munahuankichik. | { Chhánehhokmi, D. Chhánekmi, P. |
| S. Thou loved'st me, Munahuarkanki. | Chhánsungmi. |
| P. Thou loved'st us, Munnahuarkankichik. | { Chhánehhongmi, D. Chhánekongmi, P. |

IV. He—me.

| | |
|--|--|
| S. He loves me, Munahuanmi. | Chhangnom. |
| P. He loves us, Munahuanchik. | { Chhánehhokmi, excl. } D. Chhánehhikmi, incl. } Chhánekmi, excl. } P. Chhánekmi, incl. } |
| S. He loved me, Munahuarka. | Chhánsungmi. |
| P. He loved us, { Munahuarkanchik. Munahuarkaiku. | { Chhánehhongmi, excl. } D. Chhánehhingmi, incl. } Chhánekongmi, excl. } P. Chhánekongmi, incl. } |

Remark.—Chhan to love in Váyu = Muna in Quichna, is not a good word for comparison because of its being of the aoristic class of transitives in “to.” In a tensed verb the resemblance to Quichna would have been more apparent. On the other hand, I have given the Váyu dual as well as plural, because its dual formative or chhik is almost identical with the Quichna plural sign or chik, whilst the plural one differs, and nothing is more certain than that these signs are apt to mingle and the dual to fall out of use.

By referring to the above diagram of the verb *já*, to eat, it will be seen that the Váyu has many other forms expressly representative of the agent and object and therefore more significant than some of those here collated with the Quichna forms.

In Váyu the only forms which in the present state of the language refuse entirely to mix in the stream of conjugation are those which express the action passing from me to thee and no other. One cannot help imagining a system of conjugation with suffixed pronouns thus—

Ha, to give.

Tó, to strike.

| <i>Singular.</i> | <i>Plural.</i> | <i>Singular.</i> | <i>Plural.</i> |
|------------------|--------------------|------------------|----------------------|
| 1. Hagnom. | { Hákem. Háñem. | 1. To'mum. | { To'pem. To'mem. |
| 2. Hanum. | Hánem. | 2. Topnum. | Topnem. |
| 3. Hatum. | { Hámem. Hátém. | 3. To'pum. | { To'mem. To'pem. |

But the following explanations of the senses of the leading series of these forms which is real (the subordinate is wholly hypothetical) will show how utterly such a notion would mislead.

1. { Hágnom, gives to me thou or he any single person.
Hákem, gives to us any one in all numbers.
1. { To'mum, beats me thou or he any one in singular number.
To'pem, beats us any one in all numbers.
2. { Hánun, gives to thee I only. Hámí, for any other giver.
Hánem, gives to you all any save I. Hánonem, for me as the giver.
2. { Topnum, beats thee I only. To'mi, for any other beater or beaters.
Topnem, beat you all, any save I, in all numbers.
- { Hátun, gives to him thou or he or any single person except me. Hátungmi,
for me.
3. { Hámem. No such word.
Hátonem, gives to them any person or persons except me: Hátungmen,
for me.
3. { To'pum, { struck him any single person but me. Topungmi, for me.
{ strikes him, the present tense is to'mi.
{ To'mem, strikes them all any person whatever.

Háto, to give, being aoristic hátun, is equally present and preterite. But top, to strike, has for the present tomi, which moreover serves for all 3 persons alike in the singular number.

Thus it appears that num and nem alone offer the appearance of uniformly inflected personal suffixes, and that even in regard to these, the singular and plural senses are diametrically opposite.

But there are other complications resulting from the plurality of agents or of patients which account at once for the specialities of the above explanations and of those which follow. Thus—

1. Hágnom, gives to me any single person.
2. Hágnochem, give to me any two persons.
3. Hágnonem, give to me ye all only.
4. Hágnomem, give to me they all only.

In the preterite háśung takes the place of hágnóm; and with the verb top', to beat, we have only the euphonic change of gnom to mum, the residue being alike for both verbs; thus we have—

Present.

Preterite.

- | | |
|----------------|-----------------|
| 1. To'mum. | 1. Topsungmi. |
| 2. To'mochhem. | 2. Topsungchem. |
| 3. To'monem. | 3. Topsungnem. |
| 4. To'momem. | 4. Topsungmem. |

If to the above crowding of agents and patients round the action, we add the fact that the distinction of activity and passivity in the action itself is almost lost at the very corner stone of the whole structure of conjugation—because the sign of action kat' hexokin, viz., its having an object, is precisely that which denotes at once the transitive verb and the passive voice; e. g. há-to, give to him; há-tu-m, he is given and he gives—we shall at the same time perceive how difficult it is to make these languages conform to our notions of conjugation (see and compare Tickell and Philipps, voce Sontal) and shall also be prepared to hear that a system at once so complex and so incomplete has been very generally cast aside either wholly (Newári, Lepcha, Bodpa, Malayalim, Burmah, Malay); or in part (other Dravirian, Dhimali, Namsungnaga, &c.); and in this or that particular mode, one group of tongues rejecting the dual (Dravirian cultivated); another, the sex signs (Himalayan complex);* a third, the whole system of conjunct pro-

* The complex Himalayan tongues are Limbu, Kiránti, Háyu, Kúśwár, Súnuwar, Dhimali, Bhrámu, Chepáng, Kusunda, &c.

nouns (Himálayan simple* and those above cited) ; whilst the attempt to blend with the action, agents as well as patients and both in the dual and plural numbers, has been maintained only by Kiránti and some oceanic tongues, the Váyú, Sontal, &c., being now restricted to a duality and plurality on one side only, viz. that of the agents or that of the objects. The Váyú can express (like the Sontal) several agents and one patient ; or several patients and one agent ; but not a plurality of both. The Kiránti can express a plurality of both. But neither one nor the other has effected the same sort and degree of amalgamation of its conjunct pronouns in the case of its nouns as well as verbs, as the Himálayan Kuswár and the Ugro-finnic tongues generally have done, which all alike have perfectly blended suffixes for both ; whilst the Kiránti with an equal fusion in both cases prefers the method of prefix for the nouns,† and the Váyú, following the same Dravirian order of arrangement has not reached the same completeness of development in *this* respect (therein further agreeing with Dravirian) though more in others. It has a perfectly separate set of possessives for combination (áng, úng, á vel ú) ; but to the noun has got blended inseparably the 3rd of these (ang-upa, ung-upa, a-upa or wathim u-pa) and thus a euphonic combination of the whole with the nominal root has been prevented, as in Bodo which, however, as well as Váyú, can and occasionally does, use as perfectly fused‡ prefix forms as the Kiránti, and sometimes both the disjunct and conjunct prefixually, and Dhimáli likewise.§ From the verb Bodo like Malayalim and several Nilgiri tongues, has dropt the pronoun : Dimáli, like Tamil, Uraon and Male, has kept it : in Váyú, as in Sontal and Hó, the phenomena are complex.

I refer to the head of pronoun for some more remarks on this subject. In the meanwhile and in conclusion of the topic of Váyú conjugation I beg to suggest attention to the following collation of actives and passives of the several types, in the 3rd persons of the present (or future) and preterite.

* The simple or nonpronominalized are Newári, Múrmí, Gúrung, Mágár, Khas (mixed), Lep'cha, Páusen or Syár'pa (Serpa), Bodo, &c.

| Wherewith | Compare Sontal | | and Kuswar. | |
|-----------|----------------|---------------|-------------|------------------|
| | apu-ing | dal-eng aing. | Baba-im. | Thatha-im-ik-an. |
| | apa-m | dal-me-am. | Baba-ir. | Thatha-ir-ik-an. |
| | apa-t | dal-e aĩ. | Baba-ik. | Thatha-ik-an. |

| | | | |
|------------|-----------|-------------|-----------|
| † á-pa, my | } father. | tib-ú, I | } strike. |
| í-po, thy | | tib-í, thou | |
| á-po, his | | tib-á, he | |

| | | | |
|---------|---------|------------|-------------|
| ‡ Bodo. | { Váyú. | { Dhimáli. | Its verb. |
| a-pha. | | | |
| na-pha. | | | |
| bi-pha. | | | |
| | am-pa. | ka-pa. | Dengkhi-ka. |
| | um-pa. | na-pa. | Dengkhi-na. |
| | a-pa. | wa-pa. | Dengkhi. |

§ The full pronominal forms with the noun are—

| | | | | |
|---------------|-------------|------------|--------------------|--------------------------------------|
| angni apha. | { ang upa. | { kang apa | } or { kang ka-pa. | } Which last quite agrees with Kuki. |
| nangmi apha. | | | | |
| bini-apha or | | | | |
| nangui napha. | | | | |
| bini bipha. | ung upa. | nang apa | ung na-pa. | |
| | wathim upa. | oko apa | eko wa-pa. | |

COLLATION OF VOICES IN SINGULAR NUMBER.

Transitives in "to." Yento, to burn.

Present tense.

I. { Active 1. Yentungmi. 2. Yentum.
 { Passive 1. Yemum. 2. Yéni.

II. { Active 1. Simi. 2. Sitmi.
 { Passive 1. Sitnom. 2. Sitni.

III. { Active 1. Wo'mi. 2. Wo'mi.
 { Passive 1. Wo'mum. 2. Wo'mi.

IV. { Active 1. Homsunmi. 2. { Hómi. }
 { Passive 1. Hompum. 2. { Hómi. }
 { Hómi. }
 { Hómi. }

V. { Active 1. Pángmi. 2. Pómi.
 { Passive 1. Pógnom. 2. Pómi.

VI. { Active 1. Pingsungmi. 2. Pingmi.
 { Passive 1. Pingnom. 2. Pingmi.

Yémung (yem'ung).

I. { Active Yémung (yem'ung).
 { Passive Yempung.

II. { Active Sitmung.
 { Passive Sitpingmung.

III. { Active Wo'mung (Wopmung).
 { Passive Woppungmung.

IV. { Active Hómung (Homung).
 { Passive Hómpungmung.

V. { Active Pámung.
 { Passive Pápingmung.

VI. { Active Pingmung.
 { Passive Pingpingmung.

Preterite tense.

2. Yentum.
 2. Yéni.

3. Yentum.
 3. Yemum.

2. Sishtum.
 2. Siimi.

3. Wo'pum.
 3. Wo'pum.
 3. Wo'pum.

3. Hómpum.
 3. Hómpum.

3. Pákum.
 3. Pómi.

3. Pingkum.
 3. Pingmi.

Yéntang.
 Yempingtang.

Sishtang.
 Sitpingtang.

Woptang.
 Woppingtang.

Hómtang.
 Hómpingtang.

Pátang.
 Pápingtang.
 Pingtang.
 Pingpingtang.

A SPECIMEN OF THE VA'YU LANGUAGE.

Ang ming Páchya nom. Ang thoko Váyu nomi (or Gó Váyu gnom) Khásakhata Háyu itkem. Ungki dávo be Váyu ischikem. Go jekta dumsungmi. Hátha bong dumsungmi ghá má sengmi. Lé got kulup chhuyung* wanikhen. Dhankuta mu khakehning puehhum chupvikhata póguha háta vik páchikokmi. Ang kó má nom. Ang távo Gajraj Thápa nung nomi. Gonha kóphe nakphe inang munang wathi yengkum. Wathim nárung gonha blektum. Wathim ehho le pókum. Honko á thum rámi. Captánha thúm hánung hónpingkum. Ang dávo lit'nung blining chólo chupsit khen inbe gó gonha mutpinkum. Dávo chinggnak chamchem. Gon sénche. Ungjitá dávo ghá chitnum. Ang thumbé ithaji nómi gouha wálige latpinggnom. Angki thóko kósi blingmu homba imba muschikokmi (our tribe, *we*). Népál kháral khen Tábakósi bong muschikokmi. Gókháta Awal be mutvi máng nokokmi. Kúswár, Bótia, Dénwár, Awal be mutvi nomem. Awal mu ramsa ha gáng khéva má muschikokmi. Vik máng póvi, ghádimu chokphi sétung jóvi, kem má póvi thóko Kusúnda, Chépáng báhamu chháju puehhibe má muschikokmi. Angkimu kem nomi, vik le nomi; páguamu vik nom, memha, makai, dósi, pháphár, bója, lévi, rówa, mása, sákha, góhún, láru livi vik nom. Angki múlung kólube, Héngongwo báha. Lapcha, Limbu báha máng jáhe, chháju mádúmbe gadhá páhe, muschikokmi. Chháju puehhibe bója má lichem, jomsitmu ming mische le má nom. Hánung bong jomsit lichem minung bong lat'lat'ha muschikokmi. Ghákhata ha ruklung be rukkukmi, duklung be dukkokmi. Phalámú'tú'vi, singchuk'vi, kóchónvi angki thok be má nómem. Kampáchyáng, bingchopáchyáng gyétim gót khen ingchikokmi. Angki kem angki gót há páchikokmi. Angki wáchyáng angki vik sétang rówa khen rómekhatá há dúri chinchingha jéwa púngmem. Váyukhata khakehningpuehhum póvi (or chupvi) má nómem. Mische pá gyéti namsangmu séva má pómem. Jéwa Héngongwo gót khen rangai pómem. Lónchokhata dáwángmi jéwa wáschimem. Meschokhata rangai póta wáschimem Angki mulung ithijila nomi. Náýung gót kulupha bákulup khen chholup* (or lé gót kulup) bong múphla chháju mádúmbe itha dókha hamta nómem

* Phrases of numeration. See Vocabulary.

(or hamchimem). Angki kem chhálung singha póta, diha wamta, húnglúng kóha róta, khistiha supta, gége gége páchimem. Kem bhitari náyung kuna noehhikmi; kólu, imlung; kólu khó'lung. Táwokhata, támikháta gége tá má hokmi. Bangehodum khen biak pachikokmi. Náyung got kulup ha bá kulup khen lé gót kulup* bong péuku háhá ha rome ingchikokmi. Péuku phen mang wontike nam rome upu kembe lat'lat'ha, kam pápáha, phengkokmi. Mische má pápáha me'ta singtong kóbe khumpopmi. Khócho, puk, chéli, béli, méchho, jachikokmi, Gai, bhálu, phóka, má jákokmi. Singwo-khúdu, dúdu, chálung, jákokmi. Sóve tungchikokmi, bukehale tungkokmi (note the 2 forms of the verb). Sóve, angki póta, chinggnak tungkokmi. Bukehha, gyétim gót khen ingta, yanggnak tungchikokmi. Angki chhobe má blekchikokmi. Nokehkhung saschikokmi, mescho le, lóncho le. Bálung khen gyéti suna le má dakkokmi. Angki chólvi Bálung. Gyéti suna le má nom. Váyu thoko mu singtong sunaha Brahman Lama má honmi (or honmem, indefinite). Gyétim lom má khoekchikokmi. Angki vik hákhele má watkokmi. Upo met'khen táwokhata ha chhinggnak yanggnak má pápáha lingmem. Támikhata ha mische le má lingmem. Imhamu dáwo dévi angki májhua nomi. Inung wanikhen póvi suná le má nom. Angki thóko gyétim gót be lásta, yangta thóko, náti tolgong† bong yangmi. Finis.

TRANSLATION.

My name is Páte. I am a Váyu. The Khas tribe call us Háyu, but our own name is Váyu. I am an old man. I don't know how old, above sixty. I am a cultivator of land assigned by the Rája to the soldiers of the Dhunkuta regiment. I have no land of my own. My son is in the service of Captain Gajráj Thápa. You saw him here often and drew his portrait and measured him. He thought that very queer and was a little alarmed. But the Captain reassured him and he consented. I have been here four months to help you to learn our language. It is very difficult. You must judge of all. I can only answer your questions. I hope you will soon let me go home. Our people dwell in the basin of (or along the course of)

* A phrase of numeration. See Vocabulary.

† A phrase of measure. See Vocabulary. It is equal two handfuls.

the Kósi river from near the valley of Nepál proper to the Tamba Kósi. We are not Áwalias (people inured to malaria or áwal). The Áwalias dwell in the valley of the river, and are called Kuswar, Bótia, Dénwar, &c. We can't live there by reason of the malaria. Nor do we dwell on the hill summits like the Kúsúnda and Chépáng, who never cultivate, but live on wild herbs and fruits and never build houses. We have houses and cultivate the soil, growing maize and kódo and buckwheat, and rice, cotton, millets, barley, wheat and madder. We are fixed cultivators, like the Névárs, not migratory ones like the Lepchas, Limbus and others. We occupy the central parts of the hill slopes, which we cut into terraces. Rice won't grow on the tops nor any sort of grain. We go up as high as grain will grow. We use the plough or the spade, according to the nature of the site we occupy. We have no craftsmen, smiths, carpenters or potters—of our own tribe. We buy utensils and ornaments from others. We build our own houses and our women spin and weave the home-grown cotton, of which they make our clothes. None of our race are soldiers, nor do we ever take service (menial). The Névárs dye for us, if we need it; but the men wear plain clothes. Those of the women are sometimes dyed. Our villages are very small, usually fifteen to twenty houses scattered along the hill sides. Our houses are built of rough timber, plastered and thatched with grass. Two rooms in a house—one for cooking and the other for sleeping. We have no general dormitory for all the grown girls, or boys of the village. We marry at maturity, buying our wives. A wife costs fifteen or twenty rupees. If we have no money we earn her by labour in her father's house. We bury our dead without any ceremonies. We do not tattoo our bodies. Our ears we bore occasionally. We have no priest but the exorcist, who is also our only physician. None of our tribe follow the bráhmans or lamas. We abide by our own creed and customs. We eat fowls, pigs, goats, sheep, buffaloes. Not oxen, bears or monkeys, but honey, milk, eggs. We drink beer and spirits. Much of the former, as it is home-made; little of the latter, because we must buy it. Our law of inheritance gives equal shares to all the boys, and no share to the girls. Our head villager decides our disputes. We never appeal from him. Our tribe is a broken one and is reduced to very inconsiderable numbers.

BÁHING VOCABULARY.

Nouns Substantive.

- Air (wind), Jú.
 Affection, Dwakcho.
 Abuse, Waita. Khicho.
 Abode, Bwagdikha.
 Adulterer, Ryamupo.
 Adulteress, Ryamumo.
 Agriculturist, Byangsikokba.
 Amaranth (grain), gósuráni.
 Aqueduct, Kúlo. Pwálám.
 Ankle, { Khóli míchi.
 { leg joint.
 Arm-all, }
 Arm, fore, } Gú.
 Article, thing, Grókso.
 Aunt-pat. } Momo.
 Aunt-mat. }
 Anger, Sókso.
 Ant, Gágáchingmo.
 Anus, Dyála.
 Arrow, Blá.
 Ax, Khá.
 Alder tree, Búrsi.
 Bag, Sálamá
 Basket, Bainso.
 Barley, No name. Jou is used.
 Bamboo, Pálám (all). Ríkcho (small).
 Bark of tree, Singkokte.
 Back, Ching.
 Back bone, Chinreúsýé.
 Belly, Kója.
 Beast, quadruped, { Lékhóolithiba.
 { Lékhólimigwákba.
 Being, animal, Samthíba.
 Box, chest, No word.
 Bat kind, Pákati.
 Bat { male, Apo pákati.
 { female, Amo pákati.
 { young, Pákati átámi.
 Birth, No name.
 Bird kind, Chikba.
 Bird { male, Apo chikba.
 { female, Amo chikba.
 { young, Chikbaatámi.
 Beer, Gnási.
 Bread, Shéblem.
 Birch tree, Phyékulima.
 Bed, Bló'cho.
 Bed chamber, Ipdikha.
 Bed time, Ipcho béla.
 Bee, Syúra (wasp, Yúkuwá)
- Blacksmith, Teupteu'le.
 Blood, Húsi.
 Buttocks, Kósidyála.
 Battle, fight, Mócho.
 Boat, Dúnga.
 Bear, Wam.
 Beard, Shéó sòng, mouth hair or Yóli
 swón,* cbin hair.
 Boar, Apo po.
 Body, Ram.
 Burden, load, Kúra.
 Bone, Reusye.
 Breast, Kúchu.
 Breastnipple, Neucheu.
 Bow, Li. [nima, f.
 Bowman, Lícha, m. Límicha, or Lícha-
 Bottom, lowest part, Háyu.
 Boy, Táwa.
 Buffalo kind, Mésýéú.
 Buffalo { male, Apo mésýeu.
 { female, Amo mésýeu.
 { young, Mésýeu átámi.
 Bull, Bing.
 Boundary, Rélu.
 Breatb, Sam.
 Branch of tree. No word.
 Brother { Lo'ba, younger.
 { Yáwa, elder.
 Brotherhood { Lo'babum.
 Brethren {
 Brother in-law, Cháíwa. Wadyalcha.
 Calf { male, Apo gai átámi.
 { female, Amo gai átámi.
 { Pú. Dácho.
 Can, cup, { Grokso (thing).
 { Pwákutúcho grokso (water
 to drink vessel).
 Cart, No word.
 Cat kind, Birma.
 Cat { male, Apo birma.
 { female, Amo birma.
 { young, Birma átámi.
 Carpenter, Sing chokba.
 Cheek, Cbocho.
 Chesnut tree, Syéli.
 Chin, Yéoli. Yóli.
 Childkind, Tá. Gikba. Táwa. Támitáwa.
 Child { male, Táwa.
 { female, Támi.
 Children, Tádau. Táwatámi.

* Sóng vel Swón vel Swóm. The broad ó passes into wá and the final nasal is vague.

- Clay, Phélemkhápi.
 Cloth, Wá'.
 Cotton cloth, Linkhi wá.
 Woollen cloth, Unke wá.
 Silken cloth, No word.
 Clothes, raiment, Wá.
 Cloud, Kuksyal.
 Colour, Moba.
 Cold (frigor), { Junamti (weather).
 { Jú (wind).
 Companion, Wácha.
 Claw, nail, talon, Gyáng.
 Cane (calamus), Gúri,
 Cousin { Pat. } Gnwápsya.
 { Mat. }
 Cow, Gai, H. Ámo bing.
 Cough, Sheúkhé.
 Copper, No name.
 Cowherd, Gai theulba.
 Cotton, uncleaned, Linkhi.
 Cotton, cleaned, Rúwa.
 Courage, No word.
 Crow, Gagákpa.
 Daughter, Támi (girl).
 Daughter-in-law, Dyalmi.
 Dance, Síli.
 Day, Namti.
 To-day, Ana.
 Dust, Dyerbakhápi (flying earth).
 Darkness, Namring.
 Desire, wish, Dwakcho.
 Ditch, No name.
 Deer, Kísi.
 Deer { male, Apo kisi.
 { female, Ámo kisi.
 { young, Kísi átámi.
 Door, Lapcho.
 Disease, illness, No name.
 Dispute, * Mocho ? Khícho ? Infinitives.
 Dog kind, Khlícha.†
 Dog { male, Apo khlícha.
 { female, Ámo khlícha.
 { young, Khlíchá átámi.
 Death, No name.
 Dream, Gná'mo.
 Drink, Tu'mé. Tuchome.
 Drunkard, Dukba. Túba.
 Dyer, Ryákba.
 Earth—the { Khápi.
 Earth—a little {
 Ear, Sámaneu (see nose).
 Egg, Dí. Bádi (Bá = fowl).
 Elephant, No name.
 Echo, Thololamstikha.
 Enemy, No name.
 Ewe, Ámo bhéra.
 Eye, Michi.
 Eyebrow, Kur'mi swon'g.
 Eyelash, Michi swon'g.
 Elbow, Nyaksi.
 Exorcist, Jamcha.
 Earthquake, Khrínyam.
 Evening, Namtheuba.
 Face, Kúli.
 Feather, Chikbaswong (= bird-hair‡
 Feast, { Khoúma.
 Festival, {
 Father, Apo.
 Father-in-law, Yeppa.
 My father, Ápa.
 Thy father, Ipo.
 His, her, its father, Apo.
 Fever, Júsara (ague).
 Fair, { Jyapdikha,
 Market, { Lédi'kha = buying and selling
 { place.
 Fear, Níma. Gníma.
 Ferry, Hamba glúdikha.
 Fire, Mi.
 Fire-place, Mímudíkha. Bwakal.
 Field, arable, Rú. Byángsi.
 Finger, Brepcho.
 Finger-nail, Gyáng. Brepchogyáng.
 Fellow countryman, { Dwábo dyekem.
 { Dwábo dyel dim-
 { muryu.
 Fellow tribeman, { Adwábo thokkem.
 {
 Fish, Gná.
 Flavour, taste, Bró.
 Flesh, Syé.
 Flint, Chichilung.
 Flour, Phúl.
 Flea, Chukbe.
 Fence, Khor.
 Floor, Khápi (earth).
 Flower, Phúng.
 Ford, Pwáku hambag ludikha. §
 Fly, Sheúmo.
 Food, Jáwáme. Jáchome. Participles.||
 Fowl kind, Bá.
 Fowl { male, Swaréúwabá.
 { female, Chwongkameubá.
 { young, Bukballo.

* Khícho, verbal, mocho practical, dispute.

† Khicha is Newári. The insertion of a labial is a common trick of these tongues. See note on Háyu verbs.

‡ Quill is Básyurima.

§ Literally, water (of) far side issuing place.

|| Jáwáme, what he eats. Jáchome, what any one eats, an edible substance.

- Fowl wild, Sábala bá.
 Fowl's egg, Bá dí. [dylke.
 Foreigner, Wángmedyeldim. Wángme-
 Fist, No word.
 Forehead, Kúpi.
 Filth, dirt, Ríku.
 Foot, Kholi blem.
 Form, Moba.
 Forest, jungle, Sábala.
 Fruit, Sichi.
 Frost, Phúrsa.
 Frog, Krúkrú.
 Friend, No name.
 Garlic, No name.
 Ginger, Peúrim.
 Girl, Támi.
 Glue, cement, Kyapcho.
 Glutton, { Kojacha, m.
 { Kojachanima. f.*
 Grandfather, Kíki.
 Grandmother, Pípi.
 Grandson, Chácha.
 Granddaughter, Cháchánima.
 God, A god, no name.
 Gold, Syeúna.
 Goat kind, Swongára, Sóngara.
 Goat { male, Apo swongára.
 { female, Ámo swongára.
 { young, Swongára átámi,
 Goat herd, Swongára theulba.
 Grass, Jim.
 Grain, Jámá.
 Ghee, Butter, Gyáwa. (oil.)
 Groin, Téchi.
 Hand, Gúblem.
 Handle, Rísing.
 Spade handle, Rúkokchom rísing.
 Hair, Swóng.
 Hair of head, Cham.
 Hair of body, Swóng.
 Herdsman, Bing.—Méseyu-theulba.
 Heaven, Dwámu, (sky.)
 Head, Píya.
 Heart, Thim. Theum.
 Heat, Haúlo. Haúnám.
 Heel, Cheuncheu leú.
 Hail, Músi.
 Hammer, Thyakchome.
 Hammerer, Thyakba.
 Hemp, Grá.
 Hen, Ámo bá.
 Hip, Khólimichi.—or Jilamíchi.
 Hope, No word.
 Hoof, { whole } Gyakseuleú.
 { cloven }
 Hog kind, Pó.
 Hog { male, Apo pó.
 { female, Ámo pó.
 { young, Pó átámi.
 Hole, Gwályum.
 Hoe spade, Kokchóme.
 Husk, Phúra.
 Hook peg, Cháchóme.
 Horn, Grong. [horn].
 Goat's horn, Swongára ágrong (goat its
 Honey, Syúra.
 Horse kind, Ghóra.
 Horse { male, Apo ghóra.
 { female, Ámo ghóra.
 { young, Ghóra átámi.
 House, Kbyim.
 Householder, { Khyimcha, m.
 { Khyimchanima, f.
 Home, Bwágdíkha.
 Hunger, Sóli.
 Husband, Wancha.
 My husband, Wá wancha.
 Thy husband, Í wancha.
 Her husband, Á wancha.†
 Instrument, } Rúpachó.
 Implement, } Grokso.
 Infant, { Bébacha, m.
 { Bébachanima, f.
 Ice, No name.
 Intestines, Chisye.
 Iron, Syál, syal.
 Jaw, Ka'kám.
 Joint, Míchi.
 Juice, Pwa'ku (water).
 Knife, { Be'tho.
 { Chwarchom.
 Knee, Pokchi.
 Knot, Khingna. (p. p.)
 Kitchen, Kidíkha.
 King, Ho'po. Hwáng.
 Lamp, torch, To'si.
 Language, speech, Lò.
 Lip, Shéo-kokte (mouth leather).
 Leaf, Swápho.
 Tree's leaf, Sing swápho.
 Leather, Kokte (skin).
 Leg-all, Kbo'li.

* Kojachanima a female glutton. So khyimchanima a house wife. See householder: and so also of all formatives in cha, Koja = belly. Khyim = house.

† Wá, Í, Á, are the pronominal prefixes of nouns and suffixes of verbs, a thoroughly Dravirian trait and a fundamental. { Jyul—ú I
 Here is a sample of the suffixes ú the first { Jyul—í Thou } put or place.
 person = ur, wa or o. { Jyui—á He. }

Leg-true (tibia,) Phóphól.
 Liar, Limochalba.
 Light (lux,) Haúháú.
 Lightning, Ploksa.
 Life, Sam, (breath).
 Liver, Ding.
 Louse, Túsyar.
 Lungs, Syéúporeú.
 Loom, { Wápachogrokso.
 { Toblosing.
 Load, Kúra.
 Lowlander, { Dhepteche, m.
 { Dheptechanima, f.
 Mat, Tbárkimo blócho.
 Maize, Greleuwámo.
 Master, Ho'po. Hwáng.
 Mark, Syancho.
 Market, Jyapdikhalédíkha.
 Mason, Khyimpába.
 Mankind, Múryeu.
 Man { male, Wain̄sa.
 { female, Mincha.
 { young, Atami. Muryeu ata.*
 Maker, doer, Paba. Pabba.
 Maddler, Deu.
 Mare, Ámo ghora.
 Marriage, Grochyer.
 Mill, hand or water, Khuruwa.
 Millet (kangani), Bāsara.
 Millet (kodo), Chárjá.
 Millet (juwár), Binkhumá.
 Millet (sáma), Sáma.
 Milk, Neucheu.
 Mist, Kuksyal.
 Manner, {
 Mode, way, { Khó.
 Monkey (all), Moreu.
 Measure, the instrument, Khapcho.
 Medicine, No name.
 Mind, Theum.
 Moon, Taúsaba. Lá.
 Month, Lá.
 Morning, Didila.
 Music, Tapcho.
 Mother, Ámó.
 My mother, Ama.
 Thy mother, Ímo.
 His, her, its mother, Ámo.
 Money (copper), Lálajima.
 Mountain, Syerte.
 Mountaineer, { Syértecha, m.
 { Syértechanima, f.
 Mountain products, Syértedim.

Mouth, Sheö.
 Moustache, Sheösón.
 Muschito, Syúpyél.
 Mouse, Yeu.
 Nipple, Neúcheú (milk).
 Noise, Syanda.
 Neck, Sheureu (French eu).
 Name, Ning.
 Night, Téugnáchi.
 Net, No name.
 Needle, Léumje.
 Noon (day), Nam-helscho.
 Nose, Néu (French eu).
 Neighbour, Kwaudaubwakba.
 Nostril, Neu'lam (nose—way).
 Navel, Sheupum.
 Oar, No name.
 Oil, Gyáwa.
 Oak-tree, Sóbúsársi.
 Odour, smell, Ari. Rí.
 Onion, No name.
 Ox kind, Bing.
 Ox { male, Bing.
 { female, Gai. Ámo bing.
 { young, Gai átámi. Bing átámi.
 Ordure, Khli. [ákhli.
 Man's ordure, Muryukhlí or Muryu-
 Tiger's ordure, { Gupsa khli or Gupsa
 { ákhli.
 Pain, Deúkha, H.
 Palm of hand, Gublem ágwalla.
 Penis, Blí. [chiefly).†
 Place, Díkha (in composition of verbs
 Plant, Wába, P.
 Pleasure, Gyérsi.
 Plough, Jóchome.
 Ploughman, Jóba, P.
 Plain, Dyamba.
 Plainsman, { Dyambácha, m.
 Lowlander, { Dyambachanima, f.
 Plate dish, { Pú.
 Platter, {
 Parent, Kíkba, p. ‡
 Plantain, Grámochi.
 Plantain tree, Grámochi sing.
 Plantain fruit, Grámochi sichi.
 Pine (tree), Tósi.
 Pepper (black), No name.
 Palate, Kókolyam,
 Pepper (red), Dukba.
 Potter, Khápi yalba.
 Peach, Khwómálchi.
 Peach tree, Khwómálchi sing.

* Wain̄sa and Mincha are used substantively and adjectively. Not Atámi. Man's child or human child is Muryuatami = man his child. Better átá or átáwo : See child. Tami is used for the young of all animals.

† e. g. Ip díkha sleeping-place = bed chamber : Kídikha cooking-place = kitchen. ‡ To this answers Gíkba = child ; or who begets and who is born.

Peach fruit, Khwomalchi sichi.
 Price, Thing.
 Priest, Nukso.
 Poison Ning.
 Ram, Apo bhéra.
 Rat, Yéu (French eu).
 Rain, Ryá-wá.
 Rains, the, Ryáwa namti.
 Rib, Chakh yamreusye.
 Rice, unhusked, Búra.
 Rice, husked, Shéri.
 Rice, hoiled, Mómara.
 River any, Gúlo.
 Root, Syángri.
 Rust, Gári.
 Rudder, No word.
 Road, Lam.
 Rope, Grá.
 Roof, Khyimpú.
 Rhododendron, Twaksyel.
 R. — tree, Twoksyel sing.
 R. — flower, Twoksyel phung.
 R. — fruit, Twoksyel sichi.
 Salt, Yuksi.
 Silence, Lícho. [digger].
 Spade, spud, hoe, Rúkókchome (=ground-
 Spear, Hóchóme.
 Shape, form (and colour), Móba.
 Sheep kind, No name. Bhéra used.
 Spirits (distilled), Héna.
 Spindle, Ránta.
 Spinner, Pauha.
 Skin, Kokte.
 Skull, Piya réusye.
 Shoe, sandal, Khólidi paschong.
 Seed, Wáchyár.
 Seive, Ríyangma.
 Sleep, Ip'thi.
 Sail of boat, No word.
 Sand, No word.
 Spittle, Ríchukú.
 Snot, Neukhlí = nose-filth.
 Silk, No word.
 Silver, No word.
 Sport, play, Chamcho, (inf.) [Brother.
 Sister, elder, Yáwa, younger, Loba. see
 Sisterhood, Yába loba bum.
 Sister-in-law, Wadyelmi.
 Sitting chamber, Bwagdíka.
 Spider, Bájeringmo.
 Smith, Teupteulé. Teupteucha.
 Snake, Búsa.
 Servant, { Wáli, m.
 { Wálinima, f.
 Soldier, Kyakymkhusiba.

Sky, Dwamu.
 Son-in-law, Dyalcha.
 Son, { my Wá—tá.* }
 { thy I—tá. } see child.
 { his A—tá. }
 Shoulder, Balam.
 Shoulder-joint, Bálám míchi.
 Shepherd, Bhéra theulha.
 Side, Chákhyam, Pum.
 Star, Sorú.
 Summit, top, Gnári. Ajuju.
 Snow, Phúmu.
 Summer, Hau-namti = hot or heat day.
 Sweat, Gwaulau.
 Storm, Gnolojú (= great wind).
 Steam, Sam (breath).
 Smoke, Kúni.
 Strength, Sokti.
 Song, Swálong.
 Sow, Amo po. Khomi.
 Sugarcane, Byar.†
 Sun, Nam.
 Sunshine, Nam.
 Sunrise, Namdhapcho.
 Sunset, Namwamcho.
 Still, Hechopú.
 Stone, Lung.
 Stomach, Kojá.
 Shade, shadow, Bala.
 Straw, Jim (grass).
 Sword, Bétho (knife).
 Shield, No name.
 Tail, Méri.
 Testicle, Kollosíchi.
 Tiger, Gupsa.
 Thigh, Jíla.
 Thirst, { Prákudwakcho.
 { Prákudwaktimi.
 Thumb, Bombo.
 Tooth, Khleu (French eu).
 Tobacco, Kuni.
 Turmeric, Byu'ma.
 Toe, Khólihrepcho.
 Toe, great, Kholi bombo.
 Toe—nail, Gyang.
 Tongue, Lyam.
 Time, No name. Béla used.
 To-morrow, Dilla.
 Thread, Sále.
 Thunder, Buk'bu.
 Thief, { Kuncha, m.
 { Kunchanima, f.
 Theft, Kunchaniwa.
 Tree, Sing. Dhyáksi.
 Tree—bark, Sing kokte. Dhyaksi kokte.

* Wa ta-wo, my son : Wa tami, my daughter : Wa ta my child. Ta is child = Sontal and Uraon Dá. But ta is used also for son as sa is child and son in Burmese, which language has also the mi suffix, sami a girl = tami Bahing and Hayu.

† Sugar is Byar apwaku = juice of cane.

Tribe, Thok.
 Uncle, Pat. Popo.
 Uncle, Mat. Kuku.
 Urine, Charníku.
 Man's urine, Murynáchárníku.
 Goat's urine, Swongara acbarníku.
 Vein, Sagra.
 Vegetable, Cbeúle pále.
 Vetch, pea, Kyangyalyangma.
 Village, Dyal.
 Villager, { Dyalpau, m.
 { Dyalpaunima, f.
 Victuals, Jáchoine.
 Vice, sin, No word.
 Voice, Syanda, (sound).
 Valley, No word.
 Vulva, Twárchí.
 Wax, Khóye.
 Wound, Bánám.
 Wool, Bhéda swón.
 Wall, Átha. Antha.

Weaver, Wápába.
 Water, Pwáku.
 Water-spring, Pwáku blo.
 Walnut, { tree, Phoro sing.
 { fruit, Phoro sichi.
 Wife, Ming.
 Wrist, Gublemmichi.
 Work, Ru.
 Wizard, Krákrá.
 Witch, Krákránima.
 Witchcraft, Krákrániwa.
 Widow, Khlúmi.
 Widower, Khlúwa.*
 Whore, No name.
 Whoremaster, No name.
 Wealth, Grokso.
 Wing (bird's), Báphlem, (bá = fowl).
 Witness, Kwóba. Tába.
 Year, Thó.
 Yesterday, Sanamti.
 Yeast, No name.

BAHING ADJECTIVES.

Good, { Neuba†, m. and c. gender.
 { Neubanima, f.
 Bad, Ma neuba. Negative.

Deceitful, } Hánba, m. and c.
 Cunning, } Hánbanima, f.

* wa, and mi are suffixes of gender. The formative suffix cha is equivalent to wa, in words like lí-cha, a bow man; Kún-cha, a thief, &c. The feminine of wa is mi; of cha is micha, as Kojá-cha, a glutton; Kojá micha, a female glutton; or it is nima, as Kun-cha, a thief; Kunchanima, a female thief. Pau and pó are also masculine signs, whereof the former makes its feminine by adding nima; the latter by changing the po into mo, as dyal-pau, a villager; dyal paunima, a female villager; ryamni-po, an adulterer, ryamni-mo, an adulteress.

The participial suffix ba, which also makes nouns of the agent, and gives qualities a substantival character, as thyak-ba, a or the hammerer; neu-ba, a or the good one, is another masculine suffix, which takes nima for its feminine.

But participial nouns in ba are often regarded as of all genders, and when used adjectivally, as all can be used, they take no sign of gender or number, or case; they precede the substantive which they qualify in their crude form, as neuba wainsa, a good man, neuba wainsadau, good men, neuba wainsake, of a good man.

The inherent relative sense of the participles enables them to dispense with any formative, but if it be specially necessary to express gender, such words when used as nouns, can take the wa and mi sex signs, and also the signs of number always supposing that their use is substantival.

Dravidian participles are formed from the gerunds (fide Caldwell) and need a formative to give them the relative and participial sense. Such is not the case with Kiranti participles, though these when used substantivally often takes the m, me, formative and always if the participles be of the impersonated kind. See verbs.

Observe that the Vocabulary throughout is so constructed as to be a clue to grammar as well as to vocables.

† Participial, like most of the following. See and compare the verbs. Neu to be good. Neu-gna, neu-ye, neu, I, thou, he, am good. Neu-ba who, or what is good, all genders; Dual, Neubadausi; Plural, Neu-hadau. Neu = it is good. Root of verb and of noun. So Newari Bhing, which has Ji bhing, Cbha bhing, Wo bhing for 3 persons, and Bhing—hma-gu for major and minor of gender, and Bhing hwa, nihma and Bhing ping, for dual and plural.

| | |
|---|--|
| Candid, { Má hánba. Neg. Aje. Ajebwakba. | Libidinous (woman), Wainsa dwakba-nima, f. |
| Malicious, { Deukha gíba, m. c. Deukha gíbanima, f. | Gluttonous, Kojacha, m. Kojamicha, f. |
| Benevolent, { Gyersi, { pába, m. c. pabanima, f. | Drunkard, Dhékong- { -tuba, m. -tubanima, f. |
| Industrious, { Pába. m. c. Pábanima, f. | Drunken, Dukba, m. c. Dukbanima, f. |
| Idle, { Chwancha, m. Chwanchanima, f. | Foul-mouthed, { Khíba, m. c. Abusive, { Kbíbanima, f. |
| True, or truth speaking, Aje. Aje bwak-ba, m. c. Aje bwakbanima, f. | Alive, { Blenba, m. c. Living, { Blenbanima, f. |
| False, or false } Limó. Limó bwakba, m. speaking, } Limó. bwakbanima, f. | Dying, Byachopaba. |
| Passionate, } Soksa, bokba, m. c. hasty, } Soksa bokbanima, f. | Dead, Byakba, † m. c. Byakbanima, f. |
| Placid, patient, Soksa má bokab. Neg. | Sickening, { Rícho- { -paba, m. c. Sick, } -pabanima, f. |
| Cowardly, { Níba, m. c. Nibanima, f. | Sickened, sick, Ríba, m. c. Ríbanima, f. |
| Brave, Má níba. Neg. | Getting well, Swáchopába. |
| Constant-minded, } Theumjásiba, m. Unchangeable, } Theumjásibanima, f. | Got well, Swába, m. c. Swabanima, f. |
| Inconstant, } Theum májásiba. Neg. Changeful, } | Healthy, Neuba, m. Neubanima, f. |
| Wasteful, } Wárba, m. c. profuse, } Wárbanima, f. | Made well, Swápáng. |
| Niggardly, { Kákáchyákba, m. n. Kákáchyákbanima, f. | Strong, Sekticha, m. Sektimicha, f. |
| Kind, gentle, { Theum neuba, m. c. Theum neubanima, f. | Weak, { Sektimáthiba, m. Sektimáthibanima, f. |
| Harsh, unkind, Theum máneuba. Neg. | Sleepy, Myelchopába, m. Myelchopabanima, f. |
| Obedient, { Bíba, Bísiba, m. c.* Bíbanima, Bísibanima, f. | Asleep, Myelba, m. Myelbanima, f. |
| Disobedient, Má bíba. Má bísiba. | Waking, Syainscho- { -pába. m. c. -pabanima, f. |
| Masculine, Wainsake, } Genitival both. | Awake, Syains- { -siba, m. c. -sibanima, f. |
| Feminine, Minchake, } | Awakening, Syainsipába. |
| Mad, idiotic, Átheum ná neuba. | Awakeed, Syainsipána. |
| Sane of mind, Átheum neuba. | Young, Akachíme, } m. f. |
| Licit, Páchome, m. f. n. | Youthful, Yáke, } |
| Illicit, Má páchome. | Adult, { Swolacha, m. Swolami or Swolamicha, } f. |
| Bodily, Ramke, } Genitival, both of Mental, Theumke, } these: com. gender. | Old, aged, Gná-wa, m. Gná-mi, f. |
| Hungry, { Sóleumi byakba, m. c. Sóleumi byakbanima, f. | Handsome, { Rimba, m. f. n. Rimsokpa, m. Rimsongma, f. |
| Thirsty, Pwáku dwaktimi byakba. | Ugly, { Má rimba. Má rimsokba. } Neg. Má rimsongma } |
| Naked, { Áklanchó bwakba, m. bwakbanimá, f. | Tall, high, { Lába, com. gen. and m. Lábanima, f. |
| Clothed, Phísiba, m. c. Phísibanima, f. | Short, low, { Dékho lába, m. and n. Dékho lábanima, f. |
| Libidinous (man), Ming dwakba, m. | Great, big, { Gnólo, m. and n. Gnólonima, f. |

* Bíba is the transitive, bísiba the intransitive forms. See verbs.

† Byachopaba is literally who makes to die, and so of all similar words: but the form is doubtful, and in general the participle in bá, which is aoristic is used in neuter verbs exclusively to express both are senses of dying and dead, sickening and sick, the preterite particle being regarded as an appendage of transitives only.

| | |
|--|---|
| Small, Akachime. Yáke.* See young. | Married, { Gróchya dyumba, m. |
| Fat, { Syéneúba, m. and n. (well in flesh). | Gróchya dyumbanima, f. |
| Thin, Ryamba, m. and n. Ryambanima, f. | Unmarried, { Gróchya mádyumba, m. |
| Tired, { Bálba, m. and n. | Gróchya mádyumbanima, f. |
| Weary, { Balbanima, f. | Taxed, { Chóba, m. Chóbanima, f. |
| Untired, { Má balba. | Chóchome. n. |
| fresh, { Má balbanima, } Neg. | Exempt, { Má chóba. Má chóbanima. |
| Lame, Sokopá, m. n. Sokopánima, f. | Má chochome. Neg. |
| Lamed, Sokopápána, c. | New, Aninta, m. f. n. |
| Blind, { Má kwoba, m. n. | Old, worn out, Amaisam, m. f. n. |
| Blinded, { Má kwobanima, f. | Ready, prepared, { Theumna (finished). |
| Deaf, { Má nimba, m. and n. | Mir gba } (dressed as |
| Má nimbanima, f. | Kina } food). |
| Deafened, { Má nimbapana, m. n. | Unprepared, { Má theumna. } Neg. |
| Má nimbanimapanana, f. | Unmade, { Má mingba. } Neg. |
| Dumb, { Má bwakba, m. n. | Má kina. } |
| Deaf and dumb, { Gláúd-wa, m. n. | Ready, { Rimsiba (adorned), m. c. |
| = idiotic, { Gláúdwanima, f. | Rimsibanima, f. |
| Alone, solitary, { †Gícha or Ágícha, m. f. | Unready, { Má rimsiba, m. |
| Companioned, { Wárchia thiba, m. n. | Má rimsibanima, f. |
| Wise, { Jókba. Teuba. Mimba, m. n. | Common, abundant, Táchome, n. |
| Jokbanima. Teubauima. Mimbanima, f. | Rare, scarce, Má táchome. Neg. |
| Foolish, Májokba. Máteuba. Má-mimba. Neg. | Public, apert, patent, Kwóchome. |
| Learned, Parepába, m. Parepábanima, f. | Private, latent, not to be seen, Khleu-chome. |
| Ignorant, Má pare pába. | Successful, { Neupába, caus. pres. part. |
| Rich, Thíba, m. n. Thíbanima, f. | Prosperous, { Neupana, cau. past. part. |
| Poor, Má thíba, m. n. Má thíbanima, f. | Neupachome, c. f. p. |
| Talkative, Bwakba, m. n. Bwakbanima, f. | Unprosperous, { Má neupaba. } Neg. |
| Silent, Líba bwakba, m. c. ‡ (silent who remains). | Unsuccessful, { Má neupachome, } |
| Dirty = black, Kekem, m. f. n. | Saleable, Léchome, p. f. |
| Dirtied, { Kekempana, m. c. | Sold, Lena, p. p. |
| Kekemnimapanana, f. | Purchaseable, Jyapchome, p. f. |
| Clean = white, Bubum, m. f. n. | Purchased, Jyannu, p. p. |
| Cleansed, { Bubumpana, m. c. | Similar, { Deuba, m. n. |
| Bubumnimapanana, f. | Resembling, { Deubanima, f. |
| | Dissimilar, Má deuba. Má deubanima. |
| | The same, { Myemme or } (that very |
| | Myemgno, } one) m. f. n. |
| | Other, different, Kwagname. Waugme, m. f. n. |
| | Easy, doable, Páchome, p. f. |

* These two words are samples of adjectives proper. Such are very rare in this tongue wherein the qualifying words are mostly participles, usable too substantively, like those formed by the affixes, cha and wa. This is another Dravidian trait; and the rarity of proper adverbs and prepositions, and the use of gerunds in lieu of the one and of nouns in lieu of the other, (see Adverbs and Prepositions) are two more such traits, to be added to those elsewhere set down.

† I, thou, he, am alone, is Wá gícha bwa-gna, Igícha bwangé, Ágícha bwa = my, thy, his loneliness.

‡ The root bwá, to be (sit) and to speak, can hardly be distinguished in the participles.

Difficult, not doable, Má páchome.

Changeful, { Phasiba,* p. n.
Changeable, { Phaschopaba, p. n. (about
to change).

Changed, } Phásiba (self.)
} Phána (other, tr.)

About to be changed, Pháchome.

Caused to be changed, Phásipána, c. ref.
Phápána, c. tr.

Orderly, set in order, { Má hulsiba, n.
Má bulba, tr.
Má limsiba, n.
Má lipba, tr.

Disordered, { Hulsiba, n.
Hulna, tr.

Disorderly, { Limsiba, n.
Limna, tr.

About to be disordered, Lipchome.

Having, possessing, tenens, Thiba, m. c.
Thibanima, f.

Not baving, { Má thiba, m. c.

Wanting, { Má thibanima, f.

Ornamented, { Rimba, n.

Adorned, { Rimsiba, refl.
Rimpana, tr.

Plain, { Má rimba.
Má rimsiba.
Má rimpana.

Useful, Sichome, p. f. tr.

Useless, Má sichome, Neg.

Quick-moving, active, Grukba, m. c.
Grukbanima, f.

Slow moving, lazy, inert, Má grukba,
Neg.

Wholesome, eatable, Jáchome.

Unwholesome, Májáchome.

Manufactured, wrought, Pána.

Manufacturable, Páchome.

Sharp, Héba, n. p.

Sharpened, Hépána, tr. p.

Blunt, Má héba.

Blunted, Má bépána.

Grinded, Khrina.

Grindable, Khrichome.

Spun, Pánna.

Woven, Pána.

Platted, Pána.

Spacious, wide, ample, Bhyappa.

Contracted, narrow, Má bhyappa.

Moving, capable of self-motion, Dukba,†
n. part. m. f. n. Dukbanima, f.

Moveable, capable of being moved, Duk-
chome, tr. p. f.

Motionless, Má dukba, m. n.

Immoveable, Má dukchome, tr.

Moved,† self, Dukba.

Moved, other, Dungna.

Caused to be moved, Dungpána.

Figured, self, Rám dyumba.

Figured, other, Rám dyumpána.

Figureable, Rámdyum pachome.

Unfigureable, Rámdyum má pachome.

Luminous, sbining, Chyarba (self), n.

Self-illumed, Chyarsiba, refl.

Illumed by other, Chyarpána.

Illuminable, Chyarpachome.

Dark, Namrikba.

Darkened, Namringpána.

Flaming, burning self, Hoba (fire and
candle).

Kindled,

Inflamed,

Made to flame, } Hopáua.

Kindleable, } Hopáchome.

Inflamable, }

Burning, in process of being consumed
by fire, Deupba.

Burnt, consumed by fire, Deumpána.

Consumable by fire, Deumpachome.

Extinguishing (self) going out, Byakba.

Extinguished by another, Byangpána.

The upper, superior, Háteungme, m. f. n.

The lower, inferior, Háyungme.‡

Right, Jumrolame.

Left, Perolame.

Central, Alimbudime.

Eastern, Namdhapdikhalame.

Western, Namwamdikhalame.

Northern, Háteulame.

Southern, Háylulame.

Passable, } Gwakchome.

Accessible, }

Impassable, Mágwakchome.

Cultivated field, Jóna.

Culturable, Jóchome.

Uncultivated, Ma jóna.

Uncultivable, Má jóchome.

Fruitful, rich (soil), Neuba (good).

Barren, sterile, Má neuba.

Sandy, No word.

Clayey, Phélépheleme.

Calcareous, Cbunnungme.

* Be changed is pháso = change thyself. Change it is pháto. The former gives for participles pháriba and phaschopaba = what changes or is about to change; and the latter, phábá, the changer, and phána, the changed.

† The participle of Neuter verbs is single and aoristic, Dukba, is changing and changed, et sic de cæteris. ‡ Hateu, top, above: háyu, below, bottom.

Saline, Yuksinungme.
 Muddy, Kyelchome.
 Dusty, Byerbakhapinungme.
 Brackish (water), Yuksinungme.
 Fresh, { Túchome.
 Sweet, { Neúba.
 { Broba.
 Flowing, Gwakba.
 Still, Má gwakba.
 Deep, Gleumba.
 Shallow, Má gleumba.
 Windy, stormy (weather), { Júnam.*
 { Júkhime.
 { Júkhitame.
 Fine, fair, Neuba.
 Cold, { Junamme.
 { Júmi byangme.
 { Júkhitame.
 Hot, { Haulomi.
 { Haulomi byangme.
 { Haulau dyumme.
 Sunshiny, Namneume.
 Cloudy, Koksyalbwalmé.
 Rainy, Ryáwayume.
 Cold (water), Chikba.
 Hot (water), { Gleugleum, conj.
 { Gleugleum-me, disj.
 Moist, sappy green (wood), Apwákunungme.
 Juicy (fruit), Apwakunungme.
 Juiceless, sapless, Apwákumanthime.
 Wooden, Singke.
 Woody, timber bearing, { Singdhyaksi-
 { bwagdikhá.
 Wooded, {
 Stony, made of stone, Lungke.
 Stony, stone bearing (place), Lung bwagdikha.
 Iron, made of iron, Syelke.
 Iron-producing, Syelgiba.
 Leathern, made of leather, Kwoksyeuke, Kokseke.
 Skin-bearing (animal), Kwoksyeu thiba. Kokse thiba.
 Wet } clothes, &c. { Moba.
 Dry } { Sheuba.
 { Sabala bwakba.
 Wooded (country), { Sabala bwakdikha.
 {
 Open, Aklauchom, (naked).
 Jungly, Sábala dyumme.

Coloured, { Ryangsiba, self.
 { Ryangna, by other.
 Caused to be coloured, Ryangpána.
 Colourless, { Bubum (white).
 { Má ryangna.
 { Má ryangsiba.
 Colourable, Ryakchome.
 Red, Lalam.†
 White, Bubum.
 Black, Kyákyám.
 Blue, No name.
 Green, Gigim.
 Yellow, Womwome.
 Sweet, Jijim.
 Sour, Jeujeum.
 Bitter, Kaba.
 Ripe, Jiba.
 Ripened, Jiba, n. (self). Jipana tr. (other).
 Raw, Achekhli.
 That is raw, Achekhli bwakba.
 That is made raw, Achekhli pana.
 Rotten, (flesh, fruit, &c.) Jyipba.
 Rotten (wood, &c.) Chyamba.
 Coarse, { No words.
 Fine, {
 Rough, Khwárbekhlwárbem.
 Smooth, Phélephélem.
 Polished, Phélephélem.
 Unpolished, Má phélephélem.
 Straight, Dyomba.
 Crooked, { Gukba.
 { Gung-gung, or
 { Gung-gungme.
 Full, Dyamba.
 Filled, Dyampána.
 Empty, Ashéti.
 Emptied, Ashétipána.
 Solid, Dyamba.
 Hollow, Ashéti.
 Heavy, Hyalba.
 Light (levis), Hamba.
 Great, Gnolo.
 Small, Yáke.
 Long, Jheúba.
 Short, Má jheúba.
 Wide, Bhyakba.
 Narrow, Má bhyakba.
 High, Lába.

* Wind and windy, and cloud and cloudy, &c. are confounded usually : like "cold" in English which is both substantive and adjective. So also heat and hot.

† Lálam adjectival. Lalamme substantival = Newári, Hyáwun and Hyáwúntgu and lál, lál wala or red and the red one. So Bubum and Bubumme Gigim and Gigimmo, &c. The affixes jokpa (m) and jongua (f) are often substituted for me in reference to colour kyakyajokpa, the black.

| | |
|--|--------------------------------------|
| Low, Má lába. Dékholába. | Falling (being) Dokba, n. |
| Angular, Kona-bwakba. | Fallen, Dokba, n. |
| Round, Khirkhirme. | About to fail, Dokchopaba. |
| Spherical, Pulpulme. | Falling (thing), Úba. |
| Pointed, Jeujeume. | Fallen (thing), Úba. |
| Unpointed, Má jeujeume. | Rising (being) Rapba. [bwakba. |
| Edged, Hé'ba. | Remaining, risen or standing, Rapso- |
| Unedged, Má hé'ba. | Risen or stood, Rapba. Rapso bwakba. |
| Broken, } round } | Raising, Ramipaba. |
| Burst, } things, } | Raised, Ramna, tr. Rampana, caus. |
| Broken (long things), Jikba. Jingna. | Putting down (man), Jyeulba. |
| Torn (cloth, &c.), Jiba,* n. China, tr. | Put down (things), Jyeulna. |
| Split (wood), Yésiba, int. Yéna, tr. | Sitting, Bwakba. Nisiba. |
| Intire, by negative prefix to all the above. | Seating, Bwang paba. Ni paba. |
| Porous, Chapba. | Seated, Bwápána. Nina. |
| Imporous, Má chapba. | Lying down, Glesiba, Ipba. |
| Open, Hongsiba. | Laid down, { Glesiba Ipba, n. |
| Opened, Hongna. | { Glesipana Impana, tr. |
| Opening, about to open, Hongschopaba. | Waking, Syainsiba. |
| Shut, Tyangsiba. | Waked, Syainsiba. |
| Shutted, Tyangua. | Awakening, Syainsipaba. |
| Shutting, about to shut, Tyangschopaba. | Awakened, Syainsipana. |
| Spread, Hamsiba, n. Hamna, tr. | Sleepy, Myelcho dwákba. |
| Folded, Plemsiba, n. Plemna, tr. | Asleep, Myelba. |
| Expanded, blown (flower), Boba. | Sleeping, Myelba. |
| Caused to blow, Bopána. [paba. | About to sleep, Myelchopaba. |
| Expanding, about to expand, Boscho- | Domestic, home made, Dwábodyel dim. |
| Closed, shut = not expanded, Má boba. | Foreign or foreign made, Wangmedyel |
| Tight, Khimsiba, n. | dim. |
| Tightened, Khimna, tr. | Rustic, Dyelpo, m. f. |
| Loose, Thyelvim. | Loving, { (being) { Dwakba, m. |
| Loosened, Thyelvim pána. | Desirous, } { Dwakbanima, f. |
| Unsteady, loose, Má jásiba. | Desiring, } |
| Shaking, Má jána. | Loveable, } Dwakchome. |
| Fixed, firm, Jásiba, n. Jána, tr. | Desirable, } |
| Cooked, Kina. | Written, Ryangna. |
| Boiled, Pwákumikina. | Read, Parepana. |
| Roasted, Gryamna. | Eaten, Jana. |
| Grilled, Cheuna. | Drank, Túna (pausing accent). |
| Hairy, Swon thiba. | Payable, Chochome. |
| Hairless, Swon má thiba or Swon manthi. | Paid, Chooná (pausing accent). |
| Feathered, Swon thiba. [manthi. | Well odoured, Arineubame.† |
| Unfeathered, Swon má thiba or Swon | Stinking, Arimaneubame. |
| Rising or risen (sun), Dhapba. | Having odour (thing) or { Namba. |
| Sitting or set (sun), Wamba. | smelling (man), } |
| Issuing, coming out or come out (being) | Belonging to a Tib- } Leuchake, m. |
| Gluba. | tan or native of } Leuchanimake, f. |
| Entering or entered (being) Woba. | Tibet, } |

* Bukba, Jikba, as participles of neuter verbs which are aoristic, wear the form of present participles and as adjectives mean breaking as well as broken, &c.

† Me, m. affix, is a formative of all 3 genders = hma, gu of Newári, save that these are major and minor of gender. Mé like hma, gu, attaches to all qualitatives used substantively superadded to the gender sign as, gná-wá, gwa-mi = old (man and woman) whence gnáwame, guámime = the old ones, male and female. So swalo-cha-mi = mature, male and female, whence swalocháme, swalomime.

Tibetan, or produced } Leuchadyeldim.
 in Tibet (thing), } Leuchadyelke.*
 Nepalese, native of Nepal, No name.
 Belonging to a high- } Syértichake, m.
 lander or native of } Syértenimake, f.
 Hills,

Highland thing, { Syertedim or
 { Syertedyeldim.

Of person of the } Dheptechake, m.
 plains, } Dheptechanimake, f.

Produce of plains, Dheptedim.

European (per-son), { Bubum-ramcha, m.
 { Bubum-ramchanima, f.

European (goods), Bubum-ramthiba
 dyeldim.

Woollen, made of wool, Unke.

Wooly, wool-bearing, Unthiba.

Hairy, made of hair, Swonke.

Hairy, (hair-bearing), Swonthiba.

Iron, made of iron, Syalke.

Golden, Syeunake.

Silver, made of silver, Chándike.

Wooden, made of wood, Singke.

Woody, full of trees, (place), Dhyaksi-
 bwagdikha. [dikha.]

Jungley, full of jungle, Sábálá bwag-

Eye-having (being), Michi thiba.

Foot-having (being), Kholi thiba.

Wealthy (being), Grokso thiba.

Wealthy (place), Grokso-bwagdikha.

Grain-having (man), Búra thiba.

Grain-producing (field), Búra neudikha.

Grain-abounding (place), Búra bwag-
 dikha.†

COMPARISON OF ADJECTIVES.

Great, Gnolo.

As great as this, Yam khwome gnolo.

Greater than this, Yam ding gnolo.

Greatest of all, Haupe ding gnolo.

Very great, Thé gnolo.

Small, Káchim. Ákáchim.

Small as this, Yam khomekáchim.

Smaller than this, Yamding káchim.

Smallest of all, Haupe dingkáchim.

Very small, Thé káchim.

Cold, Chikba.

Colder, Yam ding chikba.

Coldest, Haupe ding chikba.

Very cold, Thé chikba.

Hot, Gleuba.

Hotter, Yam ding gleuba.

Hottest, Haupe ding gleuba.

Very hot, Thé gleuba.

NUMERALS.

Cardinals.

1, Kwong.

2, Niksi.

3, Sam.

4, Lé.

5, Gno.

6, Rukba.

7, Channi.

8, Yá.

9, Ghú.

10, Kwaddyum.

11, Kwaddyum kwong,

= ten (and) one.

12, „ niksi.

13, „ sam.

14, „ lé.

15 &c. „ Gnó.

20, Ásim, { Kwong ásim,

= a score, { = onè score.

21, Ásim kwong, { Kwong ásim,
 = a score (and) one. { one score =
 { Kwong and one.

22, Ásim niksi. Kwongásim niksi.

30, Kwong ásim, kwong áphlo,

= one score, one its half.

31, Kwong ásim, kwong áphlo kwong,

= one score, one half (and) one.

32, Kwong ásim, kwong áphlo niksi,

= one score, and one half and two.

40, Niksi ásim, = two score.

41, Niksi ásim kwong.

42, Niksi ásim niksi,

50, Niksi ásim áphlo = two score (and)
 its half.

51, Niksi ásim áphlo kwong.

52, Niksi ásim áphlo niksi.

60, Sam ásim.

70, Sám ásim áphlo, = three score (and)
 a half.

80, Lé ásim.

90, Lé ásim áphlo.

100, Gnó ásim, = five score.

101, Gnó ásim kwong.

102, Gnó ásim niksi, = five score (and)
 two.

Ordinals. None.

* Ke is the general sign of relation when one substantive only is used. When two are expressed, the second takes the á prefix (his, her, its) unless the relation be local and then dim (diem = in of) is used instead of the á; e. g. hand of man, Muryu á gu. Rice of bazar, bazar dim shéri.

† Bwagdikha = the place where is: dikha useable only with a verb: bwag from bwáko, esse in loco.

ADVERBIALS.

Once, Kwábálá.
 Twice, Nip pálá.
 Thrice, Sap pálá.
 Four times, Lep pálá.
 Five times, Gnó pálá.
 Six times, Rú pálá.
 Seven times, Chá pálá.
 Eight times, Yá pálá.
 Nine times, Ghú pálá.
 Ten times, Kwaddyum pálá.
 Firstly, { Wanting, save as they coin-
 Secondly, { cide with the last.

NUMERAL ADJUNCTS.

They are doubtfully ascribable to this tongue, or falling so fast out of use, that what remains is a mere fragment. I shall illustrate by comparison with Newári in which these generic signs are undoubtedly normal and in full use. Báhing, like Newári, has no division corresponding to the fully developed gender, m. f. n. It has not even, as Newári has, a division correspondent to the logical gender, or beings and things, which is equivalent to the major and minor of gender in the plural of Dravirian nouns and verbs also.

| English. | Newári. | Báhing. |
|----------------|------------|--------------|
| Beings | Hma | } Li? |
| Things | Gú | |
| Rationals | — | — |
| Brutes | — | — |
| Vegetalia | } Má. | { Apúm |
| Plants | | |
| Timber trees | Sima. | Éing |
| Soft trees or | } Má. | { Apúm |
| grasses | | |
| Logs | Ká | — |
| Weapons | } Pú | { Syal |
| Implements | | |
| Pairs | Jú | — |
| Flowers | Phó | Lí |
| Fruits | Gó | Bwom |
| String of | } Tya. Jhó | { Chyarchyar |
| animals | | |
| Heap of things | Dón. Púcha | Khumna |
| Herd of ani- | } Batháng. | { — |
| mals | | |
| Days | Nhu. | Kha |

In the use of these signs first comes the numeral, then the sign, and then the thing or being specified, e. g. Newári, Chha ma si ma, Báhing, Kwong sing apúm = one (timber) tree.

Chha má singhali má, N. ; Kwo apúm Séli apúm, B. = one chesnut tree.

Swó nhu nhi N ; Sam kha namti, B. = three days. Nigo santola si, N ; Ni bwom santola sichi, B. = one orange.

Chhapukhwón, N ; Kwoşyal bétho, B. = one sword. Chhago singhali si N ; Kwobwom seti sichi, B. = one chesnut fruit.

BÁHING PRONOUNS.

Singular.

I, Gó.
 Thou, Ga.
 He, sbe, it, Harem, Yam, Myam.

Dual.

We, inclusive, Gósi.
 We, exclusive, Gósuku.
 Ye, Gási.

They, { Harem dausi.
 { Yam dausi.
 { Myam dausi.

Plural.

We, inclusive, Góí.
 We, exclusive, Góku.
 Ye, Gani.

They, { Harem dau.
 { Yam dau.
 { Myam dau.

This, Yam. { All genders : no sign.
 That, Myam. {

Dual.

These, Yam dausi.
 Those, Myam dausi.

Plural.

These, Yam dau.
 Those, Myam dau.
 Self, Daubo (Dwabo).

Dual.

Dwabo dausi.

Plural.

Dwabo dau.
 Myself, Wadaubo.
 Thyself, Idaubo.
 His, her, its-self, Aداubo.

Dual.

1. { Wasi daubo, excl.
 { Isi daubo, incl.
2. Isi daubo.
3. Asi daubo.

Plural.

1. { Wake daubo, excl.
 { Ike daubo, incl.
2. Ine daubo.
3. Ane daubo.

Any, some, person, Seú : subs. and adj.
 m. and f.

| | |
|---|----------------------------------|
| Seudausi. | <i>Dual.</i> |
| | <i>Plural.</i> |
| Seu dau. | |
| Any, some, thing, Mára : subs. only : n. | |
| | <i>Dual.</i> |
| Mára dausi. | |
| | <i>Plural.</i> |
| Mára dau. | |
| Another, Kwágnáme. | |
| | <i>Dual.</i> |
| Kwágnáme dausi. | |
| | <i>Plural.</i> |
| Kwágnáme dau. | |
| Many or much, Dhékong : subs. adj. : m. f. n. | |
| | No dual or plural. |
| Few. Little, Dékho : subs. adj. : m. f. n. | |
| The same, Myem. | |
| | <i>Dual.</i> |
| Myem dausi. | |
| | <i>Plural.</i> |
| Myem dau. | |
| How many ? | } Gisko, { subs. adj. : m. f. n. |
| And how much ? | |
| As many, much, Gisko, | } ditto. |
| So many, much, Metti, | |
| All, Hwappe, ditto. | |
| Half, Akwáphala, ditto. | |
| The whole, Hwappá Haupe. | |
| Who ? inter. | { Seu. { Singular. |
| | { subs. adj. |
| | { m. and f. |
| | { Seu dausi. Dual. |
| Who ? rela.* | { Seu dau. Plural. |
| | { Gyem, sing. subs. adj. |
| | { m. f. n. |
| | { Gyem dausi, D. |
| | { Gyem dau, P. |

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|---------------------------------------|-------------|---------------------------------|
| Who ? correl. | { | Myem, Sing. subs. adj. n. |
| | | Myem dausi. Dual. |
| | | Myem dau, Plural. |
| What ? | { | Mára, Sing. subs. adj. m. f. n. |
| | | Mára dausi. Dual. |
| | | Mára dau, Plural, |
| What, rel., Mára. | | |
| Whát, correl. Maem. | | |
| Dual and Plural, Like. | | |
| Interrogative for both. | | |
| Whoever, | } Gisko, | { subs. adj. |
| Whatever, | | { m. f. n. |
| Dual, Gisko dausi, | } ditto. | |
| Plural, Gisko dau, | | |
| How many ? Gisko, | } ut supra. | |
| As many, Gisko, | | |
| So many, Metti. | | |
| Dual, Metti dausi. | | |
| Plural, Metti dau. | | |
| Either, Yemka. Myemka. | | |
| Dual, Yemka dausi. Myemka dausi. | | |
| Plural, Yemka dau. Myemka dau. | | |
| Both, Nimpho, subs. and adj. m. f. n. | | |
| Several, No word. | | |
| My, Wá'.† | | |
| Thy, I. | | |
| His, her, its, A. | | |

Dual.

| | |
|---------------------|--------------|
| My, Wási, excl.† | I'-si, incl. |
| Thy, I'-si. | |
| His, her, its, Ási. | |

Plural.

| | |
|----------------------|------------|
| Our, Wake, excl. | Ike, incl. |
| Your, Ini. | |
| Their, Aní. | |
| Mine, Wáke. | |
| Thine, Ike. | |
| His, hers, its, Áke. | |

Dual.

| | |
|----------------------|--------------|
| Our's, Wasike, excl. | Isike, incl. |
| Your's, Ísike. | |
| Their's, Ásike. | |

* Gyem takes the á prefix and is used interrogatively in a relative sense : which of these persons or things will you take ? A-gyemme ládi, wherein the disjunct form is employed, gymme.

† The words father and mother in conjunction with their pronominal adjuncts are irregular a-pa { wasi-po { wake-po. } Singular, Dual and Plural.
 { isi-po { ikepo. }
 i-po { isi-po { ini-po. }
 a-po { asi-po { ani-po. }

other relations as popo, uncle, though but iterations of po, are regular, e. g. wá-popo ; i-popo ; a-popo, &c.

Plural.

Our's, Wakke, excl. Ikke, incl.

Your's Inike.

Their's, Anike.

Own, Dauboke.

1. My own, Wa dauboke.

2. Thy own, I dauboke.

3. His, her, its own, A dauboke.

*Dual.*1. { Wasi dauboke, excl.
I si dauboke, inc.

2. I si dauboke.

3. A si dauboke.

*Plural.*1. { Wake dauboke.
I ke dauboke.

2. Ine dauboke.

3. Ane dauboke.

1. Mine own, Wake dauboke.

2. Thine own, I ke dauboke.

3. His, her, its own, A ke dauboke, &c.
like the disjunctive mine.

BÁHING VERBS.

Cause, Páto, tr. Pápáto, causal.*

Cause not, Má páto.

Can it, be able for it, { Chápo, tr.
Chamso, intr.†

Do not can it, Má chápo. Má chámso.

Cause to can { Chámpáto, tr.
or { Chámpáso, intr.
Enable { Chámpáyi, passive.
{ Chámpápáto, causal, tr.
{ Chámpápáso, intr. caus.
{ Chámpápáyi, pas. caus.

Enable not, Má champáto, &c.

Be born, Giko, n.

Give birth to { Kiko, trans.
or beget, { Kingso, refl.
{ Kingyi, pas.
{ Gingpáto, tr. causal.
{ Gingpáso, intr. causal.
{ Gingpáyi, pas. causal.Cause to beget { Kingpáto, tr.
or produce, { Kingpáso, reflex.
{ Kingpáyi, passive.

Be not born, Má giko, Neg.

Beget or produce not, Má kiko, Neg.

Live, { Bleno. (Blenno), n.
{ Blenpáto, tr. causal.
{ Blenpáso, intr. causal.
{ Blenpáyi, passive.

Live not, Má bleno (bleuno).

Die, { Byákko, n.
{ Byangpáto, tr. causal.
{ Byangpáso, intr. caus.
{ Byangpáyi, passive.Kill, { Sáto, tr.
{ Sásó, reflex. tr.
{ Sáyi, passive.
{ Sápáto, tr. caus.
{ Sápáso, reflex. caus.
{ Sápáyi, passive.

Be (sum), Ká. Khe. Gno. Irreg. Defec.

Be† (maneo), { Bwakko, n. (sit).
{ Bwangpáto, tr. causal.
{ Bwangpáso, intr. caus.
{ Bwangpáyi, passive.Become, { Dyúmo, n.
{ Dyúmpáto, tr. causal.
{ Dyúmpáso, intr. causal.
{ Dyúmpáyi, passive.

* This is the causative of all verbs and is derived from the root pá, to do or make. It answers to the Háyu form "do for another." In Báhing it is the causative, also bearing that sense.

† These are = wonto and woncho of Háyu, the definite and indefinite of Hungarian; in English can it or be able for it and be able simply. Chápo forms the potential of all verbs.

‡ Be in a certain place = sit. Sheer entity is expressed by Ks, Khe, Gno, defectives.

Have, possess, { Thiwo Neg. Ref.
 { Bwálá, Neg. Def.

Make to have, { Thiýáto, tr.

Cause to possess, { Bwálápáto, tr.

Do, make, { Páwo, tr.
 { Páso, reflex
perform, { Páyi, passive,*
 { Pápáto, tr. c.
 { Pápáso, intr. c.
 { Pápáyi, passive, c.

Keep doing, { Páwomukho bwákho, n.
 { Pásogno bwákho, n.

Cease doing or to do, Pácho pléno, n.

Suffer, { Tyáro, tr.
 { Tyársó, reflex. tr.
 { Tyári, pas.

Cause to suffer, { Tyárpáto, tr.
 { Tyarpáso, reflex.
 { Tyárpáyi, passive.

Observe or { Kwó-gno, tr. (see).
Examine, { Kwó-so, reflex.
 { Kwó-yi, passive.
 { Kwó-páto, tr. causal.
 { Kwó páso, intr. causal.
 { Kwó-páyi, passive, causal.

Understand, { Teuto. Jokko. Mim-
Know, { to, tr.
Think, { Teuso. Jongso. Mim-
 { so, reflex.
 { Teuti. Jongyi. Mim-
 { ti, passive.

Cause to un- { Teupáto. Jongpáto.
derstand, { Mimpáto, tr. c.
Explain, { Teupáso. Jongpáso.
 { Mimpáso, intr. c.
 { Teupáyi. Jongpáyi.
 { Mimpáyi, pas. c.

Feel, { Limléto, trans.
Be sensible of, { Limlésó, reflex.
bodily, { Limléyi, passive.

Remember, { Mimto, trans.
 { Mimso, reflex.
 { Munti, passive.
 { Mimpáto, tr. causal.
 { Mimpáso, reflex. causal.
 { Mimpáyi, passive, causal.

Forget, { Plendo, tr.
 { Plenso, tr. reflex.
 { Plendi, passive.
 { Plen-pá-to-so-yi, causal.

Desire, { Dwakko, intr.
Lust for, { Dwakto, tr.
love, { Dwangso, reflex.
 { Dwakti, passive.
 { Dwangpá-to-so-yi, c.

Hate, { Grámdo, tr.
 { Grámso, reflex.
 { Grámdi, passive.
 { Grámpá-to-so-yi, c.

Recognise, { Syanto, tr.
 { Syanso, reflex.
 { Syanti, passive.
 { Syanpáto, &c. c.

Be modest, Gnúne bóko, n.

Make modest, { Gnúne bok-pá-to-so-
 { yi, tr. or
 { Gnúne pok-ko-so-
 { yi, tr.

Laugh, Riso, n.

Make laugh, Risipá-to-so-yi, c.

Laugh at, irride, Rito. Riso.
Riti, tr.

Weep, Gnwákko, n.

Make weep, Gnwángpá-to-so-yi, c.

Dance, Silimóvo, † tr.

Make dance, Silimópá-to-so-yi, c.

Sing, Swálong páwó, tr.

Make sing, Swálong pápáto-so-yi, c.

Hope, No such word.

Fear, Gnito, n.

Frighten, { Gnipáto, tr. c.
 { Gnipáso, reflex. c.
 { Gnipáyi, passive.

Cause to frighten, { Gnipápáto, tr.
 { Gnipápáso, reflex.
 { Gnipápáyi, p.

Tremble, { Khiwo, n.
 { Khipáto, causal.
 { Khipáso, c. reflex.
 { Khipáyi, c. p.

Be good, Nyúwo or Nyúba bwákko, n.

Become good, Nyúba dyúmo, n.

* Observe, once for all, that the three forms of the transitive (primitive and causal alike) refer to him (any one) to self and to me (the speaker). Thus *sá-to*, kill him or it; *sá-so*, kill thyself; *sá-yi*, kill me; that in verbs like to do, the sense is modified of necessity but without essential change; and that the passive has no imperative of the 2nd or 3rd person. Hence the entry under the 1st, and hence as will be seen in the grammar, the existence in the language of certain special forms of the verb subsidiary to the so-called passive.

† Sili = a dance. The verb *móvo* has the separate sense of to fight, but is used with many nouns to verbalize them.

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|-------------------------------|---|---------------------------|---------------------|---|-----------------|--|
| | { | Nyúto, tr. | Call, summon, | { | Bréto, tr. | |
| | | Nyúso, reflex. | | | Bréso, reflex. | |
| Make good, | | Nyúni, passive. | | | Bréti, passive. | |
| | | Nyúba dyumpáto, tr. c. | | | | |
| | | Nyúba dyumpáso, refl. c. | | | | |
| | | Nyúba dyumpáyi, pas. c. | | | | |
| Be glad, Ithim nyúlá. Gyerso. | | | | | | |
| | { | Athim nyúpáto, tr. | | | | |
| Gladden, | | Ithim nyúpáso, reflex. | | | | |
| | | Wáthim nyúpáyi,* passive. | | | | |
| | | Gyérso páto-páso-páyi. | | | | |
| Be vexed, sad, | { | Ithim má nyúlá. | | | | |
| | | Deukha giso. | | | | |
| Vex, sadden, | { | Deúkha giwo. | | | | |
| | | Athim mányúpáto. | | | | |
| Be satisfied, Rúgno, n. | | | | | | |
| Satisfy, Rúpáto, c. | | | | | | |
| | { | Bwakko, n. | | | | |
| Utter, speak, | | Bwangpáto, c. tr. | | | | |
| Articulate, | | Bwangpáso, c. reflex. | | | | |
| | | Bwangpáyi, c. passive. | | | | |
| Relate, tell, speak to or of, | { | Só-gno. Sódo, tr. | | | | |
| | | Só-so. Sóso, refl. | | | | |
| | | Sóyi. Sódí, pas. | | | | |
| Cause to relate, to tell, &c. | { | Sópáto, tr. | For both the above. | | | |
| | | Sópáso, refl. | | | | |
| | | Sópáyi, p. | | | | |
| Talk, make discourse, | { | Ló páwo, tr. | | | | |
| | | Ló páso, reflex. | | | | |
| | | Ló páyi, passive. | | | | |
| Cause to talk, | { | Ló pápáto, tr. | | | | |
| | | Ló pápáso, reflex. | | | | |
| | | Ló pápáyi, passive. | | | | |
| Tell my, thy own, his, tale, | { | Wá ló sógno. | | | | |
| | | I ló sógno. | | | | |
| | | A ló sógno. | | | | |
| Be silent, Liba bwakko, n. | | | | | | |
| | { | Liba bwangpáto, tr. | | | | |
| Silence, | | Liba bwangpáso, reflex. | | | | |
| | | Liba bwangpáyi, p. | | | | |
| Cause to silence, | { | Liba bwá pápáto, tr. | | | | |
| | | Liba bwá pápáso, reflex. | | | | |
| | | Liba bwá pápáyi, p. | | | | |

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| | { | Bréto, tr. | | | |
| | | Bréso, reflex. | | | |
| | | Bréti, passive. | | | |
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* Means, may I be gladdened. Be gladdened, the sheer passive, cannot be expressed. I, thou, he, is gladdened = Wáthim nyúpáyi, Ithim nyúpáne, Athim nyúpáda. The last = he gladdens and is gladdened. Gyérso and gyérsipáto are much closer expressions for be glad and gladden. The others are formed from thim or theum, the heart, and the conjunct pronouns, opposite is the phase of the active and passive voices.

| Active. | Passive. |
|-----------------|-----------------|
| Athim nyúpádn. | Wáthim nyúpáyi. |
| Athim nyúpádi. | Ithim nyúpáne. |
| Athim nyá páda. | Athim nyúpáda. |

Approve, like, { Dwakto, tr.*
Dwangso, reflex.
Dwakti, p.

Cause to like, &c. { Dwang páto, tr.
Dwang páso, reflex.
Dwáng páyi, p.

Dislike, { Mádwakto.
Disapprove, { Mádwangso, &c.
Mádwakti.

See, { Kwó-gno, trans.
Kwó-so, reflex.
Kwó-yi, passive.

Show, { Kwó páto, tr. c.
Kwó páso, reflex. c.
Kwó páyi, p.

Hide, lie hid, Khleúso, n. and reflex.

Hide it, Khleúto, tr.

Hide me, Khleúti, p†

Cause to be hid, or
to be concealed, { Khleu páto, tr.
Khleu páso, reflex.
Khleu páyi, p.

Cause to cause to
be hid, { Khleu pápáto, tr.
Khleu pápáso, refl.
Khleu pápayi, p.

Hear, { Ninno, tr.
Ninso, reflex.
Ninyi, pas.

Cause to hear, { Nin páto, tr.
Nin páso, reflex.
Nin páyi, passive.

Taste, { Dapto, tr.
Damsó, reflex.
Dapti, passive.

Cause to taste, { Dam páto, tr.
Dam páso, reflex.
Dam páyi, passive.

Blow, apply breath, { Múto, tr.
Múso, reflex.
Múyi, passive.

Cause to blow, { Mú páto, tr.
Mú páso, reflex.
Mú páyi, passive.

Smell, { Námo or Nammo, tr.
Namso, reflex.
Námyi, passive.

Cause to smell, { Nam páto, tr.
Nam páso, reflex.
Nam páyi, passive.

Touch, { Khúto, tr.
Khúso, reflex.
Khúti, passive.

Cause to touch, { Khú páto, tr.
Khú páso, reflex.
Khú páyi, passive.

Eat, { Jáwo. Báwo, tr.
Jáso. Báso, reflex.
Jáyi. Báyi, passive.

Cause to eat, = feed, { Já páto, tr.
Já páso, reflex.
Já páyi, pas.

Drink, { Túgno, tr.
Túso, reflex.
Túyi, pas.

Cause to drink, { Tundo, tr.
Tunso, reflex.
Tundi, pas.

Be intoxicated, Dúko. ‡ Neutro, pas.

Make intoxicated,
or intoxicate, { Dung páto, tr.
Dung páso, reflex.
Dung páyi.

Vomit, { Méwo, tr.
Méso, reflex.
Meyi, pas.

Cause to vomit. { Mé páto, tr.
Mé páso, reflex.
Mé páyi, pas.

Sleep, Ipo, n.

Cause to sleep, { Im páto, tr. c.
Im páso, reflex. c.
Im páyi, pas. c.

Cause to
sleep, { Ipto, tr. { These are equal
Ipsó, refl. { in sense to the
Ipti, pas. { last, and exhibit
a 2d mode of
making causals.

Wake, Syáyinsó, n.

Awaken, { Syáyinsi páto, tr.
Syáyinsi páso, reflex.
Syáyinsi, payi, pas.

Dream, { Guámung mówo, tr.
Guámung móso, reflex.

Cause to
dream, { Guámung mópáto, tr.
Guámung mópáso, reflex.
Guámung mópáyi, pas.

Fart, Píso, n. Pisipáto, &c. causal.

Fart at him. Pito. Píso. Piti, tr.

* The intransitive is dwakko = approve, whence transitive dwakto approve it like the Hungarian determinate and indeterminate.

† In this as in most verbs, the three forms refer respectively to me (Khleuti) to him, or it, any being or thing (Khleuto) and to self (thyself) (Khleuso) and so precisely in the causal also, Khleu páyi, Khleu páto and Khleu páso.

‡ This neuter is conjugated as a passive Dungi, Dunge, Duga.

- Shit (cace), Wási páto, &c. causal.
 Cace supra aliquid vel aliquem, Wáto, tr.
- Piss (minge), { Chárso, n.
 { Chársi páto, causal.
- Inminge, Chárto, &c. tr.
- Kiss (give and take osculo), { Chuppáwo, tr.
 { Chuppáso, reflex.
 { Chuppáyi, pas.
- Cause to kiss, Chuppá páto, &c. c.
- Kiss (coë), { Leuwo, tr. (French eu).
 { Leuso, reflex.
 { Leuyi, pas.
- Be kissed, Leupáso, reflex. causal.*
- Sneeze, { Háchlún mówo, &c. tr.
 { Háchlún mópáto, &c. causal.
- Spit, Téwo, tr. Téso, reflex. Téyi, pas.
- Cause to spit, { Té páto, tr.
 { Té páso, reflex.
 { Té páyi, pas.
 { Té pápáto, &c. D. C.
- Belch, { Byamne mówo, &c. tr.
 { Byamne mópáto, &c. causal.
- Cough, { Syókhé mówo, tr.
 { Syókhé mópáto, &c. c.
- Hiccup, { Dikumi dokto, &c. tr.
 { Dikumi doungpáto, &c. c.
- Swallow, { Dwakko, tr.
 { Dwangso, reflex.
 { Dwangyi, pas.
- Yawn, { Hapsa mówo, tr.
 { Hapsa mópáto, &c. c.
- Lick, { Tukko, tr.
 { Tungso, reflex.
 { Tungyi, pas.
- Cause to lick, { Tung páto.
 { Tung páso.
 { Tung páyi.
- Suck, { Bippo, tr.
 { Bimso, reflex.
 { Bimyi, passive.
- Cause to suck, { Bim páto, tr.
 { Bim páso, reflex.
 { Bim páyi, pas.
- Bite, { Kráto, tr.
 { Kráso, reflex.
 { Kráyi, pas.
- Cause to bite, { Krá páto, tr.
 { Krá páso, reflex.
 { Krá páyi, pas.
- Kick, Tá-to, tr. Tá-so, refl. Ta-yi pas.
- Cause to kick, { Tá páto, tr.
 { Tá páso, reflex.
 { Tá páyi, pas.
- Strike, { Teuppo, tr. (French eu).
 { Teumso, reflex.
 { Teumyi, pas.
- Cause to strike, { Teum páto, tr.
 { Teum páso, reflex.
 { Teum páyi, pas.
- Scrape or Scratch (violently), { Khwáro, tr.
 { Khwároso, reflex.
 { Khwáryi, pas.
 { Khwárpáto, &c. c.
- Scratch (for ease, itching), { Bapto, tr.
 { Bamso, reflex.
 { Bapti, pas.
 { Bampáto, &c. causal.
- Push, { Nyapto, tr.
 { Nyamso, reflex.
- Shove, { Nyapti, pas.
 { Nyampáto, &c. causal.
- Pull, { Syallo, tr.
 { Syalso, reflex.
 { Syalyi, pas.
 { Syal páto, &c. causal.
- Walk, Gwakko, n.
- Cause to walk, { Gwang páto, tr.
 { Gwang páso, reflex.
 { Gwáng páyi, pas.
- Walk about, { Khirso, n.
- Take the air, { Khirsi páto, &c. c.
- Run, Wanno, n. Wanpáto, &c. c.
- Run away, { Júkokáto, n.
 { Júnguikápáto, &c. c.
- Creep, Búsa khwongo gwakko, n.
 = Snake-like walk.
- Jump, hop, { Próko, n.
 leap, { Prong páto, &c. c.
- Fly, Byéro, n. Byer páto, &c. c.
- Swim, No such word.
- Cross over, { Ilamba glúgno, n.
 { Hamba glúpáto, &c. c.
- Wade across, Gwaktako or Gwaksomami-hamba glúgno,† n.
- Sink, Wamto, n.
- Drown or cause to sink, Wampáto, &c. tr.
- Bathe, Chiso, n. Chisipáto-páso-páyi, c.
- Cause to bathe or bathe him, { Chikto, tr.
 { Chikso, reflex.
 { Chikti, pas.
- Wash, { Syappo, tr.
 { Syamso, reflex.
 { Syamyi, pas.
 { Syampáto, &c. c.
- Dress = dress thyself, { Phiso, reflex.
 { Phisipáto-páso-páyi, c.

* The causal reflex is always used to express an act voluntarily suffered by the party addressed.

† Literally, having walked issue on that side.

| | | |
|---|---|--|
| Cause to dress, = dress him, | { | Phikto, tr. |
| | | Phingso, reflex. |
| | | Phikti, pas. |
| Cause to cause to dress or have dressed, | { | Phing páto, tr. |
| | | Phing páso, reflex. |
| | | Phing páyi, pas. |
| Undress, | { | Kleuto, tr. |
| | | Klenso, reflex. |
| | | Kleuyi, } pas.* |
| | | Kleuti, } |
| | | Kleupáto-páso-páyi, c. |
| Be naked, | | Iklauchó dyúmo, n. |
| Make naked, | | Aklauchó páwo, tr. |
| Cause to make naked, | { | Aklauchó-pá- páto, tr. c. |
| Be hungry, | { | Sólyumi byakko, n. |
| | | = hunger by die. |
| Make hungry, | { | Sólyumi byáng páto, &c. tr. c. |
| Be thirsty, | { | Pwáku dwakko, n. |
| | | Pwáku dwaktimi, byakko. |
| Make thirsty, | { | Pwáku dwáng páto, &c. tr. c. |
| Be sleepy, Myeldo, n. | | Ipthi dwánglá, n. |
| Make sleepy, | { | Myel páto, tr. c. |
| | | Myel páso, reflex. c. |
| | | Myel páyi, pas. c. |
| | | Ipthi dwang páto-páso- páyi. |
| Be cold (to sentient being), | { | Júmi byakko, n. |
| | | = cold by die. |
| Make cold (ditto), | { | Júmi byang páto- páso-páyi, c. |
| Be warm or hot, Gluglum dyúmo, n. | | |
| Make warm or heat, | { | Gluglum páwo-páso-páyi, tr. |
| | | Gluglum dyúm páto-páso- páyi, c. or |
| | | Gluglum thýumto-thúmso- thúmyi, c. |
| | | |
| Be dirty, Kékém dyúmo, n. | | |
| Make dirty, | { | Kékém páwo, &c. tr. |
| | | Kékém dyúmpáto, &c. or |
| | | Kékém thyumto, &c. |
| Be clean, Búbúm dyúmo, n. | | |
| Make clean, cleanse, Búbúmpáwo or bu- bum dyúm páto, tr. | | |
| Cause to cleanse, | { | Bubum pápáto, } |
| | | Bubum pápáso, } double |
| | | Bubum pápáyi, } causal. |

Be angry, Sokso páso, tr. reflex.
 Make angry, Sokso páwo, tr.
 Cause to make angry, Sokso páto, &c. c.

Abuse, revile, { Khryakko, tr.
 Abase, { Khryangso, reflex.
 Humble, { Khryangyi, pas.
 Humiliate, { Khryang páto-páso-

* My informants say Kleuyi can only be said by the clothes, and that a man must say Kleutigi, or Kleuti, = give me undressed or undress me. So also Kleuso is objected to. Thus to Hindi Or and Pain answer Utár not Utar.

† Rupáyi, says the work, do me: rúpáti, says the man, do for me. Compare Háyu pósung and pásung. So work is rúpáwo, and work for him, rúpáto. Rú is a substantive = work.

- Tire, { Bal páto, tr.
Bal páso, reflex.
Bal páyi, pas.
- Cause to tire, { Bal pápáto, } double
 { Bal pápáso, } causal.
 { Bal pápáyi, }
- Take rest, Náso, n. or intr.
- Give rest, { Nasi páto, tr.
Nasi páso, refl. } causals.
 { Nasi páyi, p. }
- Move, Dúkho, n.* Yóngso, reflex.
- Cause to move or move it, { Dung páto. Dukto, tr.
Dung páso. Dungso, refl.
Dung páyi. Dukti, pas.
- Cause to cause to move or cause it to be moved, { Dung pápáto, tr. c.
Dung pápáso, refl. c.
Dung pápáyi, pas. c.
- Remove, { Yokto, tr.
Yongso, reflex.
Yokti, pas.
- Be still, { Jásó, ac. intr.
Má dukto, tr. neg.
Játo, tr.
Jásó, reflex.
Játi, pas.
- Make still, stabilize, or steady, { Má dukto, tr. neg.
Játo, tr.
Jásó, reflex.
Játi, pas.
- Cause to make still, or firm, { Má dung páto, c. tr.
Já páto, c. tr.
- Be quick, Grukko, n.
- Quicken, { Grung páto. Grukto.
Grung páso. Grungso.
Grung páyi. Grukti.
- Be slow, Wákha dyúmo, n.
- Make slow, Wákha páwo, tr.
- Stay, stop, † Jásó, n. ac. intr.
- Stop it or stay it, Játo, tr.
- Stop me, Játi.
- Cause to be stopt, or cause to cause to stop, { Jápáto, tr.
Jápáso, reflex.
Já páyi, pas.
- Let him depart, { Lácho giwo, } tr.
Lá páto, }
- Let me depart, { Lácho giyi, } pas.
Lá páyi, }
- Let thyself depart, { Lácho giso, } refl.
Lá páso, }
- Be intoxicated, { Dukko, n.
Dukba dyumo or paso, n.
Dukba páwo, tr.
Dukba páso, reflex.
Dukba páyi, pas.
Dung páto-paso-páyi, c.
- Tell the truth, Aje bwakko, n.
- Cause to tell truth, { Aje bwáng páto, tr.
Aje bwáng páso, reflex.
Aje bwáng páyi, pas.
- Tell falsehood, { Limo -challe, n.
-bwakko n.
- Cause to tell, &c. { Limo bwang páto,
or Limo chal páto.
- Believe, { Bito, tr.
Biso, reflex.
Biti, passive.
Bipáto, &c. causal.
- Obey, { Bito, tr.
Biso, reflex.
Biti, passive.
Bipáto, &c. causal.
- Disbelieve, { Má bito, } Negative.
Disobey, { Má biso, } Negative.
 { Má biti, }
- Present, { Jeullo, tr. (put down,
place.)
Jeulso, reflex.
Jeulyi, pas.
Jeul páto-paso-páyi, causal.
- Offer, { Jeullo, tr. (put down,
place.)
Jeulso, reflex.
Jeulyi, pas.
Jeul páto-paso-páyi, causal.
- Accept (= take), { Bláwo, tr.
Blaso, reflex.
Bláyi, pas.
Blápáto, &c. causal.
- Refuse or forbid, { Má bláwo, Neg.
Sheomi tyakko, tr. ‡
Sheomi tyangso, reflex.
Sheomi tyangi, pas.
Sheomi tyang páto, &c. caus.
- Prevent, { Tyakko, tr.
Tyangso, reflex.
Tyangyi, pas.
Tyangpáto, &c. c.
- Restrain hinder, { Tyakko, tr.
Tyangso, reflex.
Tyangyi, pas.
Tyangpáto, &c. c.
- Cherish, { Theullo, tr.
Theulso, reflex.
Theulyi pas.
Theulpáto-paso-páyi, causal.
- Abandon, { Wárdo, tr. (= throw
away).
Wárso, reflex.
Wárdi, pas.
Wárpáto, &c. causal.
- Set at liberty, { Pleuo, tr.
Plenso, reflex.
Plenyi, pas.
Plenpáto, &c. causal.
- Confine, imprison, { Tyákko. See
Prevent.
- Have, { Bwálá, n. irreg.
Thiyelá, n. reg.
Thiwo, n. reg.

* Dukko, if leave not place. Yóngso, if you do.

† Stay, remain, don't go, is, Bwáko = sit.
(word).

‡ Literally, hinder by mouth

| | | |
|------------------------------|----------------------|------------------|
| Cause to have or possess, | { Bwakba | }-páwo, tr. |
| | { Thiba | |
| | { Bwakba | }-páso, refl. |
| | { Thiba | |
| | { Bwakba | }-páyí, pas. |
| | { Thiba | |
| | { Bwakba | }-pápáto, &c. c. |
| | { Thiba | |
| | { Thipáto-páso-páyí. | |

| | |
|------------------------|------------------------------|
| Want, | { Má bwála. |
| | { Má thiyela. |
| | { Má thiwo. |
| Give, | { Giwo, tr. Giso, reflex. |
| | { Gii (Giýi), pas. |
| | { Gipáto-páso-páyí, causal. |
| Give back = return, | { Léti giwo-giso-giyi, |
| | { ut supra. |
| Give again (more), | { Anaiyo giwo-giso-giyi, |
| | { ut supra. |
| Take, | { Bláwo, tr. |
| | { Bláso, reflex. |
| | { Bláyi, pas. |
| | { Blápáto-páso-páyí, causal. |

| | |
|----------------------------|---------------------------|
| Take back (see return), | { Léto, tr. |
| | { Léso, reflex. |
| | { Léti, pas. |
| | { Lépáto-páso-páyí, caus. |

| | |
|-----------------------|-----------------------------|
| Take again (more), | { Anaiyo bláwo-bláso-bláyi, |
| | { ut supra. |

Be saved, Bléno (blenno) (see live.) n.

| | |
|-------|-------------------------------------|
| Save, | { Blenpáto, tr. |
| | { Blenpáso, reflex. |
| | { Blenpáyí, pas. |
| | { Blenpápáto-pápáso-pápáyí, causal. |

Be well, Neuwo or Nyuwo, n.

| | |
|---------------------|--|
| Cure, make well, | { Neupáto. Neuto, tr. |
| | { Neupáso. Neuso, reflex. |
| | { Neupáyí. Nenti, pas. |
| | { Neupápáto-pápáso-pápáyí, c. of neuter. |
| | { Neupáto-páso-páyí, c. of tr. |
| | { Khlamto, tr. |

| | |
|---------------------------|----------------------------|
| Spoil, de- stroy, mar, | { Khlamso, reflex. |
| | { Khlamti, pas. |
| | { Khlam páto-páso-páyí, c. |
| | { Khlam pápáto. Double c. |

| | |
|-------------------|-----------------------------|
| Be hand- some, | { Rimmo, n. |
| | { Rimba dyúmo, com. gender. |
| | { Rimsókpa dyúmo, mas. |
| | { Rimsóngma dyúmo, fœm. |

| | |
|-------------------------------|-------------------------------------|
| Make hand- some, adorn, | { Rim páto, tr. |
| | { Rimba páwo, com. gender. |
| | { Rimsókpa páwo, mas. |
| | { Rimsongma páwo, fœm. |
| Be mature, adult, | { Swálocha dyúmo, mas. |
| | { Swálochi dyúmo, fœm. (no neuter). |

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|---------------------------|----------------------|
| Make mature, or adult, | { Swálocha páwo, m. |
| | { Swálochi páwo, f.* |

| | |
|------------|-------------------------------------|
| Be strong, | { Sekticha dyúmo, m. |
| | { Sektimicha dyúmo, f. (no neuter). |

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|-----------------------------|-----------------------|
| Make strong, Strengthen, | { Sekticha páwo, m. |
| | { Sektimicha páwo, f. |

Grow, Báro, n.

| | |
|------------------------------|--|
| Grow it or cause to grow, | { Bár páto, tr. |
| | { Bár páso, reflex. |
| | { Bár páyi, pas. |
| | { Bár pápáto-pápáso-pápáyí, double caus. |

Decay, Syówo or Sheówo, n.

| | |
|--------------------------|---------------------------|
| Decay it, Make decay, | { Syó páto, tr. |
| | { Syó páso, reflex. |
| | { Syó páyi, pas. |
| | { Syó pápáto, &c. causal. |

| | |
|----------------|-----------------------|
| Steal, Rob, | { Kúwo, tr. |
| | { Kúso, reflex. |
| | { Kúyi, pas. |
| | { Kúpáto, &c. c. |
| | { Kúpápáto, double c. |

Murder, Sato (see kill),

| | |
|--------------------|--------------------|
| Deceive, Cheat, | { Hanto, tr. |
| | { Hanso, reflex. |
| | { Hanti, pas. |
| | { Hanpáto, causal. |

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| Accompany (Nung) needs a noun or pronoun), | { Nung láwo, n. |
| | { Kwángkho láwo, n. |

| | |
|--------------------------|---|
| Cause to accom- pany, | { Kwángkho lápáto-páso- páyí, tr. c. |
|--------------------------|---|

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|--------------|-----------------------|
| Leave, quit, | { Wáto, tr. |
| | { Wáso, reflex. |
| | { Wáyí, pas. |
| | { Wápáto, &c. causal. |

| | |
|--|-----------------------|
| Remain with, Cause to remain with, | { Kwángkho bwákko, n. |
| | { to, causal. |

Sit, Niso, n. compare with the next.

| | |
|-------------------|----------------|
| Seat or set down, | { Nito, tr. |
| | { Nisipáto, c. |

* Compare Newári lyá-hma ju, and lyáse ju; lyá-hma juye-ki or yá, and lyáse juyeki or yá. Also Háyu Bang-cho dum. Bang-mi dum; Bang-cho páko or thumto and Bangmi thumto or pako. The Báling verbs dyumo and páwo have the usual characteristics, given often afore. Rimo is a primitive neuter, whose causal is rimpáto.

- Nito, tr.
 Niso, reflex.
 Seat, { Niti, pas.
 { Nipáto, causal.
 { Nipápáto, double causal.
 Stand, Rápo, n.
 Make stand, Rámpáto, c.
 Remain { Rapsógno bwakko, n.
 { Rápó mokho bwakko, n.
 standing, {
 Keep him standing, { Rám páto mokho
 { bwákko.*
 { Rápsógno bwápáto.
 Be erect, { Bwóko or Bokko, n. (to
 { recumbent).
 { Rápó (to sitter).
 Stoop, Khúmo, n.
 Make stoop, Khúm páto, &c. c.
 Lie down, Gléso, n.
 Lay down, Glésipáto-páso-páyi, c.
 Get up (to a sitter), Rápo, n. (see stand).
 Get up (to a { Bwóko, n. (see
 { be erect).
 Make get up, Bwong páto. Rám páto.
 Fall (being), Doko, n.
 Cause to fall, Dóng páto-páso-páyi, c.
 Slip down, { Bhlúwo, n.
 Slide down, {
 Cause to slip or slide, { Bhlúpáto-páso-
 { páyi, c.
 Get on, mount, Wógno, n.
 Cause to mount, Wópáto-páso-páyi, c.
 Dismount, Yúwo, n.
 Cause to dismount, Yúpáto-páso-páyi, c.
 Put, place, put down, { Jyúto, tr.
 { Jyúlso, reflex.
 { Jyúlyi, pas.
 { Jyúlpáto, causal.
 { Jyúlpápáto, d. c.
 deposit, {
 Take up, { Bokto. Guppo, tr.
 Lift, raise, { Bongso. Gumso, reflex.
 { Bokti. Gumyi, pas.
 Cause to take up, { Gumi páto, &c. } c.
 {
 Throw, { Grepto, tr.
 { Grepso, reflex.
 { Grepti, pas.
 { Grem páto, &c. c.
 Catch as thrown, { Dáto, tr.
 { Dáso, reflex.
 { Dáti, pas.
 { Dápáto, &c. causal.
- Keep, Jyullo, tr. (see place).
 Snatch away, { Réto, tr.
 { Réso, reflex.
 { Réti, pas.
 { Ré páto, &c. c.
 Throw away, { Wádo, tr.
 { (see Abandon).
 Squander, {
 Be near, Nentba dyúmo, n.
 Approximate, Nentha dyúmpáto, tr.
 Be distant, Brábá dyúmo. Bráwo, n.
 Distance, { Brápáto, &c. tr.
 { Brába dyumpáto, c. tr.
 Bring (see come), { Pito, tr.
 { piwo: pito is
 { Piso, reflex.
 { trans. or caus.
 { Piyi, pas.
 { =make come), { Pipáto, &c. causal.
 Bring down (see { Yúto, tr.
 { Yúwo = come { Yúso, reflex.
 { down). { Yúti, pas.
 { Yúpáto, &c. c.
 Bring up (see { Kúto, tr.
 { Kúwo = come { Kúso, reflex.
 { up). { Kúti, pas.
 { Kúpáto, &c. c.
 Fetch, Blátha diwo, n. (to take go.)
 Cause to fetch, { Blátha dipáto-páso-
 { páyi, tr. c.
 { Láto, tr.
 Take away, { Lásó, reflex.
 { Láyi, pas.
 { Lápáto, causal.
 Send, { Phli-gno, tr.
 { Phli-so, reflex.
 { Phli-yi, pas.
 { Phli-páto, &c. causal.
 Carry, bear, { Kúro, tr.
 { Kúrso, reflex.
 { Kúryi, pas.
 { Kúrpáto, &c. c.
 { Siwo, tr.
 Hold, take in { Siso, reflex.
 { hand, grasp, { Siyi, pas.
 { Sipáto, &c. causal.
- Hold up, { Játo, tr.
 { Jáso, † reflex.
 Support, { Játi, pas.
 { Jápáto, &c. c.
 Let it fall, Ucho giwo.
 Fall (thing), Uto, n. and a.
 Make fall or fell, Úpáto, c. and Úto, tr.
 Enter, Wógno, n.

* In conjugation, this compound verb preserves the trans. of rampáto and the neuter of bwakko blended in one conjugation. See grammar.

† Jáso gives Jáse, it is (self) supported, and Jáso or Japaso must be used for "Be supported," though there be a passive formed from Jati = support me. All this results from the imperfect development of the passive voice which has no imperative of the 2nd person.

- Cause to enter, { Wópáto, c.
Admit, insert, { Wondo, tr.
Issue, Gúño, n.
Cause to issue, Glúpáto. Glúndo.
Ascend = climb tree, Wógno, n.
Ascend = come up, slope, Kúwo, } n.
Ascend = go up, slope, Hátru láwo. }
Descend = come down, Yúwo, n.
Descend = go down, Háyu láwo, n.
Descend = climb down tree, Glúño, n.
Arrive, { Jwakdiwo, } n. there, here.
 { Jwápiwo, }
 { Jwakko, n.*
Cause to arrive, { Jwángdipáto, } tr.
 { Jwángpipáto, }
 { Jwángpáto, }
Depart, Glúño (issue).
Cause to depart, Glúpáto, &c.
Precede, Gnalla yóngso, intr.
Cause to precede, Gnalla yongpáto or
yokto, reflex.
Follow, Nótha yóngso, intr.
Cause to follow, { Nótha yongpáto, ref.
 { Nóthá yokto, c.
Attend on, Kwongkho bwakko, n.
Disappear, Khleuso, reflex. (see hide).
Cause to disappear, { Khleuto, tr.
 { Khleuti, pas.
Appear, Kwainso páso, reflex.
Make appear, Kwainso páwo, tr.
Make me appear, Kwainso páyi, pas.
Be lost, lose, Shéoto, n. and a.
Cause to lose, lose it, Shéopáto-páso-
páyi, c.
Search, { Lamo, tr.
 { Lamso, reflex.
 { Lamyi, pas.
Cause to search, { Lam páto, tr.
 { Lam páso, reflex.
 { Lam páyi, pas.
Find, { Táwo, tr.
 { Táso, reflex.
 { Táyi, pas.
Cause to find, { Tá páto, tr.
 { Tá páso, reflex.
 { Tá páyi, pas.
Begin, Prénso, n.
Cause to begin, { Prénsi páto, tr.
 { Prénsi páso, reflex.
 { Prénsi páyi, pas.
- End, } Ryipo, n.
Be ended, } Ryim páto, &c. tr.
End it, { Theumo, tr.
Cause to be { Theumso, reflex.
 euded, or { Thenmyi, pas.
 finish, { Theun páto, &c. causal.
Come, Piwo, n. Ráwo, n.
Cause to { Pipáto. Rápato, tr.
 { Pipáso. Rápáso, reflex.
come, { Pipáyi. Rápáyi, pas.
 { Pipápáto. Rápápáto, d. c.
Go, Diwo,† n. Lawo, n.
Cause to go, { Lápáto. Dipáto, tr.
 { Lápáso. Dipáso, reflex.
 { Lápáyi. Dipáyi, pas.
Continue, Bwakko, n. (sit).
Cause to continue, { Bwápáto, tr.
 { Bwápáso, reflex.
 { Bwápáyi, pas.
Get out of the { Youngso, n.
way, { Lam plénno, tr.
Cause to clear { Yokto, tr. Lamplén-
the way or { páto, tr.
make get out { Youngso, reflex. Lam-
of the way, { plénpáso, reflex.
 { Yokti, pas. Lam-
 { plénpáyi, pas.
Wait, Bwakko, n. (sit).
Cause to wait, Bwángpáto-páso-páyi.
Wait for, { Rimdo, tr.
 { Rimso, reflex.
Expect, { Rindi, pas.
 { Rimpáto, &c. c.
Arrive { here, { Jwak diwo, n.
 { there, { Jwak piwo, n.
Cause to arrive, { Jwak dipáto, &c.
 { Jwak pipáto, &c.
Depart, { Glúño, n. (issue).
 { Láwo, n. (go).
Cause to depart { Glúpáto, &c. c.
 or dismiss, { Lápáto, &c. c.
Return, Léto, n. } See take
Cause to return, Lépáto, &c. } back.
Be high, grow, Báro, n.
Make high, or { Bár-páto-páso páyi, c.
grow it, {
Be large, big, Gnólo dyóno, n.
Make big or enlarge, Gnólo thyumto or
dyúmpáto, &c. c.
Be fat, Syéneúwo,† n.

* Jwakko = arrive simple. The adjuncts tell whether by going (diwo) or by coming (piwo).

† See "take away" láto, = cause to go but not used so.

† Syé = flesh : neuba = good : neuwo = be good, whence neugua, I am good

Fatten, Syéneúpáto, &c. c.
 Be thin, Ryammo, n.
 Make thin, Ryampáto, &c. c.
 Increase, Báro, n.
 Cause to increase, Bár páto, &c. c.
 Decrease, Syó-wo, n.
 Cause to decrease, Syó páto, &c. c.
 Be good, Neuwo, n.

Make good, { Neuto, tr.
 { Neuso, reflex.
 { Neuti, pas.
 { Neú páto, &c. c.

Be bad, Má neuwo, neg.
 Make bad, Má neuto, &c. c. n.

Add to or { Gapto, tr.
 Augment, { Gapso, reflex.
 { Gapti, pas.
 { Gampáto, &c. causal.

Deduct from or lessen, Syó páto, tr.
 (decrease).

Cultivate { Chó-gno, tr.
 (earth), { Chó-so, reflex.
 { Chóyi, pas.
 { Chópáto, &c. c.

Dig, { Kóko (kokko), tr. def.
 { Kóngso, (?) refl. indef.
 { Kóngyi,* pas.
 { Kóng páto, &c. c.

Plough, { Jító, tr.
 { Jóso, reflex.
 { Jóti, pas.
 { Jópáto, &c. c.

Sow, { Phúto, tr.
 { Phúso, reflex.
 { Phúyi,† passive.
 { Phú páto, &c. c.

Transplant, { Khleumo, tr.
 { Khleumso, reflex.
 { Khleumyi, passive.
 { Khleum páto, &c. causal.

Reap, { Riko (rikko), tr.
 { Ringso, reflex.
 { Ringyi, pas.
 { Ring páto, &c. causal.

Gather, { Náto, tr. Préto, tr.
 pluck { Náso, reflex. Présó, reflex.
 flowers { Náyi, pas. Préyi, p.
 greens, { Nápáto, &c. c. Prépáto,
 &c. c.

Eradicate, { Ruko, tr.
 { Rungso, reflex.
 { Rungyi, pas.
 { Rungpáto, &c. causal.

Fall, { Uto, n. and tr.
 Be felled, {

Fell it, { Uto, tr.
 { Uyi, pas.

Cause to fell, { Upáto, tr.
 { Upáso, reflex.
 { Upáyi, pas.

Breed cattle, { Theúlo, tr.
 { Theúloso, reflex.
 { Theúlyi, pas.
 { Theúlpáto, &c. causal.

Slaughter cattle, { Chwáro, tr. (cut).
 { Chwárso, reflex.
 { Chwáryi, pas.
 { Chwárpáto, &c. caus.

Graze, { Chári páwo, tr.
 { Chári páso, reflex.
 { Chári páyi, pas.
 { Chári pápáto, causal.

Flay or decorticate or peel, { Wókko, tr.
 { Wóngso, reflex.
 { Wóngyi, pas.‡
 { Wóngpáto, causal.

Shear, { Krito, tr.
 { Kriso, reflex.
 { Kriti, pas.
 { Kripáto, &c. c.

Shave, { Khwáro, tr.
 { Khwárso, reflex.
 { Khwáryi, pas.
 { Khwárpáto, c.

Buy, { Jyappo, tr.
 { Jyamso, reflex.
 { Jyamyi, pas.
 { Jyampáto, &c., causal.

* Kongyi, says field, dig me. Dig for me is kóktigí, and dig for him kóktigíwo.

† The reflex and passive forms of the verbs to dig, to plough, to sow and all such are eschewed, because incapable of application by or to a human being and the constructio ad sensum still overruling any feeling of grammatical uniformity with my unsophisticated informants. The transitive and reflex forms of such verbs often tally with Hungarian definite and indefinite.

‡ Wongyi, says the skin, and Wongso, says man to skin, Wókti or Wóktigí, says one man to another, strip off my skin. So also of "shear," &c.

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| Sell, | <ul style="list-style-type: none"> Léño, tr. Léso, reflex. Leyi, pas. Lépáto, c. |
| Change or Exchange, | <ul style="list-style-type: none"> Pháto, tr. Pháso, reflex. Pháyí, pas. Phápáto, c. |
| Lend, | <ul style="list-style-type: none"> Jyár giwo, tr. Jyár giso, reflex. Jyár giyi, pas. Jyár gipáto, &c. c. |
| Borrow, | <ul style="list-style-type: none"> Jyár oláwo, tr. Jyár bláso, reflex. Jyár bláyi, pas. Jyár blápáto, c. |
| Pay debt, | <ul style="list-style-type: none"> Chó-gno, tr. Chó-so, reflex. Chó-yi, pas. Chó-páto, c. |
| Count, | <ul style="list-style-type: none"> Hikko, tr. Hingso, reflex. Hingyi, pas. Hing páto, &c. c. |
| Measure or weight, | <ul style="list-style-type: none"> Thápo, tr. Thámso, reflex. Thámyi, pas. Thám páto, &c. c. |
| Plaster (wall), | <ul style="list-style-type: none"> Khlyakko, tr. Khlangso, reflex. Khlangyi, pas. Khlang páto, &c. c. |
| Make house, Khim páwo (see make). | |
| Make clothes, Wá páwo (see make). | |
| Spin, | <ul style="list-style-type: none"> Sále panuo, tr. Sále panso, reflex. Sále panyi, pas. Sále paupáto, &c. c. |
| Weave, Wá páwo (supra). | |
| Sew, | <ul style="list-style-type: none"> Phyéro, tr. Phyérsso, reflex. Phyéryi, pas. Phyérpáto, &c. c. |
| Grind, | <ul style="list-style-type: none"> Khri-to, tr. Khriso, reflex. Khriyi, pas. Khripáto, &c. c. |
| Work mine, Kháni kokko (dig). | |
| Work iron, Syal teuppo (beat). | |
| Work wood, | <ul style="list-style-type: none"> Singchokko, tr. (plane). Singchongso, reflex. Singchongyi, pas. Singchongpáto, &c. c. |
| Work clay, | <ul style="list-style-type: none"> Khápi lwákto, tr. (knead). Khápi lwángso, reflex. Khápi lwákti, pas. Khápi lwángpáto, &c. c. |

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| Cook, | <ul style="list-style-type: none"> Kiwo, tr. Kiso, reflex. Kiyi, pas. Kipáto, &c. c. |
| Be cooked, be prepared (rice), | Ming-gno. n. |
| Canse to be cooked, | <ul style="list-style-type: none"> Ming páto, &c. c. |
| Be ripe (fruit), Jiwo, n. | |
| Ripen, Jipáto, &c. c. | |
| Boil, Kiwo, (cook). | |
| Roast, | <ul style="list-style-type: none"> Grémdo, tr. Grémso, reflex. Grémdi, pas. Grémpáto, c. |
| Grill, | <ul style="list-style-type: none"> Cheowo, tr. Cheoso, reflex. Cheoyi, pas. Cheo páto, &c. c. |
| Cut with knife by one blow. | Chwáro (slaughter). |
| Cut with scissors, Krito (shear). | |
| Cut by frequent drawing, or saw, | <ul style="list-style-type: none"> Séwo, tr. Séso, reflex. Séyi, pas. Sépáto, &c. c. |
| Perforate or pierce, | <ul style="list-style-type: none"> Hóto, tr. Hóso, reflex. Hóyi, pas. Hópáto, &c. c. |
| Be torn, Jito, n. | |
| Tear, | <ul style="list-style-type: none"> Chito, tr. Chiso, reflex. Chiyi, pas. Chipáto, &c. c. |
| Be split, Yéso, reflex. | |
| Split, | <ul style="list-style-type: none"> Yéto, tr. Yéyi, pas. Yépáto, &c. c. |
| Be broken, Jingso, reflex. | |
| Break, | <ul style="list-style-type: none"> Jikko, tr. and n. Jingso, reflex. Jingyi, pas. Jingpáto, &c. c. |
| Be burst, Bukko, n. | |
| Burst it, | <ul style="list-style-type: none"> Pwákko or Pnkkó, tr. Pwangso, reflex. Pwangyi, pas. Pwangpáto, &c. c. |
| Brew, | <ul style="list-style-type: none"> Kiwo, tr. (cook). Kiso, reflex. Kiyi, pas. Kipáto, &c. causal. Héto, tr. |
| Distil, | <ul style="list-style-type: none"> Héso, reflex. Héyi, pas. Hépáto, &c. c. |

Filtrate, { Phyakto, tr.
Thyangso, reflex.
Defecate, { Thyangyi, pas.
Thyangpáto, &c. c.
Be sharp, Syamso, reflex.
Sharpen, { Syappo, tr.
Syamso, reflex.
Syamyi, pas.
Syampáto, &c. c.
Be blunt, Khlamso, reflex.
Make blunt { Khlamto, tr.
Khlamso, reflex.
(or spoil), { Khlamti, pas.
Khlampáto, &c. c.
Be shaken, Dungso, reflex. Dukko, n.
Shake, { Dukto, tr.
Dungso, reflex.
Dukti, pas.
Dungpáto, &c. c.
Be still, { Jásó, reflex.
Be firm, { Játó, tr.
Játi, pas.
Make still, { Játó, tr.
Játi, pas.
Make firm, { Jápáto, &c. c.
Be contained, Ringso, reflex.
Contain, { Rikto, tr.
Ringso, reflex.
Hold, { Rikti, pas.
Ringpáto, &c. c.
Be sustained, Jásó (see Be firm).
Sustain, Játó (see Make firm).
Be retained, Tyangso, reflex.
Retain, { Tyakko, tr.
Tyangso, reflex.
Keep in, { Tyangyi, pas.
Tyangpáto, &c. c.
Ooze out, Chappo, n.
Make ooze out, { Cham páto, tr.
Cham páso, reflex.
Cham páyi, pas.
Cham pápáto, c.
Be full (belly), Ru-gno, n.
Fill (belly), { Rú páto, tr.
Rú páso, reflex.
Rú páyi, pas.
Rú pápáto, &c. c.
Be full (vessel), Dyammo, n.
Fill (vessel), { Dyam páto, tr.
Dyam páso, reflex.
Dyam páyi, pas.
Dyam pápáto, c.
Be empty, Asyéti dyúmo, n.
Empty, { Asyéti páwo, tr.
Asyéti páso, reflex.
Asyéti páyi, pas.
Asyéti pápáto, &c. c.
Shine, Chyáto, n.
Cause to shine, Chyarpáto-páso-páyí, c.

Be dark, Namrikko, n.
Darken, { Namring páto, tr.
Namring páso, reflex.
Namriog páyi, pas.
Namring pápáto, &c. c.
Be luminous, Haubau dyúmo, n.
Make luminous, Haubau páwo, tr.
Blow as wind, Khito, n. Byéro, n. (fly).
Cause to blow, { Byér páto, &c. c.
Khi páto, &c. c.
Flow as water, Gwákko (go)
Cause to flow, Gwang páto, &c. c.
Flower, Bóto, n.
Cause to flower, Bópáto, &c. c.
Fruit, Sito, n.
Cause to fruit, Si-páto, &c. c.
Be ripe (fruit only), Jiwo, n.
Ripen, Jipáto, &c. c.
Be ripe as grain, &c., Ming-gno, n.
Ripen, Ming páto, &c. c.
Be hot, Glé-wo, n.
Heat, Glépáto, &c. c.
Be cold (thing only), Chhikko, n.
Make cold, Chhing páto, &c. c.
Be rotten, Jippo, n.
Make rotten, Jimpáto, &c. c.
Be raw, Achekhlí dyúmo, n.
Make raw, Achekhlí páwo, tr.
Be lighted (lamp), Hówo, n.
Light (lamp), { Hópáto, tr.
Hópáso, reflex.
Hópáyí, pas.
Hópápáto, c.
Be kindled (fire), Khryamso, reflex.
Kindle (fire), { Khrypáto, tr.
Khryamso, reflex.
Khryamti, pas.
Khryam páto, c.
Be burnt (destroyed by fire), Deuppo, n.
Burn it, { Deum páto, tr.
Deum páso, reflex.
Deum páyi, pas.
Deum pápáto, c.
Burn (corpse), { Chwé-wo, tr.
Chwé-so, reflex.
Chwé-yi, pas.
Chwé-páto, &c. c.
Be buried (= bury thyself), Thimso, r.
Bury it, { Thimmo, tr.
Thimso, reflex.
Thimyi, pas.
Thimpáto, &c. c.
Be melted (= melt thyself), Yóngso, r.
Melt it, { Yóng páto, tr.
Yóng páso, reflex.
Yóng páyi, pas.
Yóng pápáto, &c. c.
Be congealed, Jámidyúmo, n.

- Congee it, Jámi páwo, tr.
- Collect, bring or put together, { Khuppo, tr.
Khumso, reflex.
Khumyi, pas.
Khum páto, &c. c.
- Be collected, Khumso, supra,
- Spread, { Hammo, tr.
Hamso, reflex.
Hamyi, pas.
Hámpáto, &c. c.
- Share out, { Yokko, tr.
Yong-o, reflex.
Apportion, { Yongyi, pas.
Yong páto, &c. c.
- Separate, { Phwakko, tr.
Set apart with- { Phwangso, reflex.
out division, { Phwángyi, pas.
Phwang páto, &c. c.
- Set together, Khuppo (see Collect).
- Divide (by cutting, &c. what whole), { Chyakko, tr.
Chyangso, reflex.
Chyangyi, pas.
Chyangpáto, &c. c.
- Unite, join, what divided or broken, { Khryapto, tr.
Khryamso, reflex.
Khryami, pas.
Khryami páto, c.
- Knot it, { Saptó, tr.
Join by knot, { Samso, reflex.
Sapti, pas.
Sampáto, &c. c.
- Unknot, { Prwákko, tr.
Loosen, { Prwángso, reflex.
Unseam, { Prwángyi, pas.
Unfold, { Prwáng páto, c.
Brá-wo, tr.
Bra-so, reflex.
- Scatter, { Bráyi, pas.
Brápáto, &c. c.
Brápápáto, d. c.
- Mix, { Húl-do, tr. Húl-so, reflex.
Húl-di, pas.
Húl-páto, &c. c.
- Unmix. Separate { Phwakko.
what mixed, { (See Separate.)
- Acquire, gain by labour or earn, { Grókso páwo, tr.
Grókso páso, refl.
Grókso páyi, pas.
Grókso pápáto, c.
- Save, (what earned, (see collect), { Blenpáto. Khuppo, tr.
Blenpáso. Khumso, refl.
Blenpáyi. Khumyi, pas.
Blenpápáto. Khumpáto, c.
- Squander, { Wádo, tr.
Wáso, reflex.
Wádi, pas.
Wárpáto, c.
Wárpápáto, d. c.
- Fold, { Plepto, tr.
Plemso, reflex.
Plepti, pas.
Plempáto, &c. c.
- Unfold, { Prwakko, tr.
Prwangso, reflex.
Prwángyi, pas.
Prwang páto, &c. c.
- Open, { Hókko, tr.
Hopso, reflex.
Hóngyi, pas.
Hóng páto, &c. c.
- Shut, { Tyákko, tr.
Tyángso, reflex.
Tyángyi, pas.
Tyáng páto, c.
- Press, { Tinto, tr.
Timso, reflex.
Squeeze, { Tinti, pas.
Depress, { Timpáto, c.
Timpápáto, d. c.
- Compress or Express, { Nippo, tr.
Nimso, reflex.
Nimyi, pas.
Nimpáto, &c. c.
- Turn over carefully, { Lipto, tr.
Limso, reflex.
Lipti, pas.
Limpáto, &c. c.
- Turn topsy turvy, Húl-do, tr. (mix).
- Roll up, { Tyallo, tr.
Tyalso, reflex.
Tyalyi, pas.
Tyal páto, &c. c.
- Unroll, { Prwakko, tr. (see unfold).
Prwangso, reflex.
Prwángyi, pas.
Prwang páto, &c. c.
- Be loose, slack, Thyelvimdyúmo, n.
- Loosen, slacken, { Thyelvim páwo, tr.
Thyelvim páso, refl.
Thyelvim páyi, pas.
Thyelvim pápáto, c.
- Be tight, Muske dyúmo, n.
- Tighten, Muske páwo, tr.
- Bind, { Chákko, tr.
Chúngso, reflex.
Chúngyi, pas.
Chúng páto, &c. c.
- Unbind, { Prokko, tr.
Prongso, reflex.
Prongyi, pas.
Prong páto, c.
- Pack, { Kúra páwo, tr.
Kúra páso, reflex.
Kúra páyi, pas.
Kúra pápáto, c.
- Unpack, Prwákko (see unroll).

- Climb or get up, { Wóгно, n.
tree, &c. { Wópáto.
Come down, Yúwo, n.
- Put on (fire), { Kwádo, tr.
{ Kwáso, reflex.
{ Kwádi, pas.
- Take off (fire), { Nito, tr.
{ Niso, reflex.
{ Niti, pas.
- Put in (solid), { Piko, tr. Wondo.
{ Pingso, r. Wonso.
{ Pingyi, p. Wonyi.
{ Pingpáto, &c. Won-
páto. } See Wogno, get in.
- Pull out, { Gleúndo, tr.
{ Glúnsó, refl.
{ Gleúndi, pas. } See issue,
Take out, { Gleúnpáto, Glugno.
{ &c. c.
- Pour in (liquid), Piko (supra).
- Catch as poured, { Dáto, tr.
{ Dáso, reflex.
{ Dáti, pas.
{ Dápáto, &c. c.
- Take down { Yuto, tr.
or { Yúso, reflex. } See Yuwo,
Bring down, { Yúyi, pas. come down.
{ Yúpáto, &c. c.
- Put up above, { Lwakto, tr.
{ Lwangso, reflex.
{ Lwakti, pas.
{ Lwangpáto, &c. c.
- Bring up, { Kúto, tr.
{ Kúso, reflex. } See Kuwo,
{ Kúyi, pas. come up.
{ Kúpáto, tr. c.
- Stop, stay (to going { Jáso (reflect. or
man), { intrans.)
Stop him, stay him, Játo, tr.
Stay or stop me, Játí, pas.
- Cause him to stop, { Jápáto-páso-
stay, { páyi, c.
- Stay, stop, one who { Tyákko, tr.
flees, or a road, { Tyángso, reflex.
{ Tyángyi, pas.
{ Tyáng páto, &c. c.
- Prevent, hinder, { Tyákko, supra.
forbid.
- Let go, Lácho giwo.
- Enable { Láne chapba páwo, tr.
to go, { Láne chapba páso, refl.
{ Láne chapba páyi, pas.
{ Láne chapba pápáto, &c. d. c.
- Rub, { Yálo, tr.
{ Yáso, reflex.
{ Yályi, pas.
{ Yálpáto, c.
- Polish, { Phélephéle páwo, tr.
{ Phélephéle páso, reflex.
{ Phélephéle páyi, pas.
- Be polished, Phélephéle dyúmo, n.
- Cause to be polished, { Phélephéle dyúmpáto-
polished, { páso-páyi, c.
- Cover, { Sheumo, tr.
{ Sheumsó, reflex.
{ Sheumyi, pas.
{ Shenm páto, &c. c.
- Uncover, { Hoko, tr.
{ Hóngso, reflex.
{ Hongyi, pas.
{ Hongpáto, &c. c.
- Shoot, { Appo, tr.
{ Amso, reflex.
{ Amyi, pas.
{ Ampáto, &c. c.
- Wring, { Chyúndo, tr.
Twist neck, { Chyúrso, reflex.
cloth, &c. { Chyúrdi, pas.
{ Chyúr páto, &c. c.
- Twist or make { Chéwo, tr.
rope, { Chéso, reflex.
{ Chéyi, pas.
{ Chépáto, c.
- Be like, resemble, Deu-wo, n.
- Make like, Deu páto páso-páyi, c.
- Be white or clear, Bubum dyúmo, n.
- Make white or { Bubum páwo, tr.
clean; whiten { Bubum páso, reflex.
and cleanse, { Bubum páyi, pas.
{ Bubum pápáto, d. c.
- Be wet, Jiso, reflex.
- Wet it, { Jito, tr.
{ Jiso, reflex.
- Make wet, { Jiti, pas.
{ Jipáto, &c. c.
- Be dry, Syeu-wo, n.
- Make dry, Syeu-páto-páso-páyi, c.
- Dry in sun, { Bláto, tr.
{ Bláso, reflex.
{ Bláti, pas.
- Dry at fire, { Gramdo, tr.
{ Gram-o, reflex.
{ Gramdi, pas.
{ Grampáto, &c. c.
- Be flavoursome, Brógno, n.
- Make flavoursome { Brópáto, tr.
or flavour it, { Brópáso, reflex.
{ Brópáyi, pas.
- Be sweet, Jijim dyúmo, n.
- Make sweet, { Jijim dyúmpáto, tr. c.
{ Jijim páwo, tr.
- Be sour, Phokko, n.
- Make sour, Phong páto-páso-páyi, c.
- Be bitter, Káwo, n.
- Make bitter, Kápáto-páso-páyi, c.

Be knotted, Khingso, reflex.

Knot it, { Khikto, tr.
Khingso, reflex.
Make knotted, { Khikti, pas.
Khingpáto, &c. c.

Be great, Gnólo dyúmo, n.

Make great, Gnólo páwo, tr.

Be small, Yáke or Kachim dyúmo, n.

Make small, Yáke or Kachim páwo, tr.

Be heavy, Hyallo, n. Hyalba dyúmo, n.

Make heavy, Hyalpáto, tr.

Be light, f Hammo, n.

(levis), { Hamba dyúmo, n.

Make light, Hampáto, tr. Hampápáto, c.

Be hard, Tingko dyúmo, n.

Harden, Tingko páwo, tr.

Be soft, Lobo dyúmo, n.

Soften, Lobo páwo, tr.

Be straight, Dyámo, n.

Straighten, Dyampáto-páso-páyi, c.

Be crooked, Gúko, n.

{ Kúko, tr.
Crook it, { Kúngso, reflex.
Kúngyi, pas.
Kúng páto, &c. c.

Be rich = have, { Khiwo or
Khibi dyúmo, } n.
Bwála,

Enrich = make { Thipáto, &c. c.
Thiba dyumpáto-
have, { páso-páyi, c.
Bwálapáto.

Be poor, { Má thiwo.
Má thiba dyúmo.
Má bwála.

Impoverish, { Má thiba páwo.
Má thi páto.
Má bwála páto.

ADVERBS AND PREPOSITIONS COMPARED.

Come, Piwo.

Come in (into the { Khyimá gwáre piwo
house), { or wógo.

Come out (of the { Khyimátola piwo or
house), { Glúgo.

Come back, to rear, Nótha piwo.

Come on, to front, Guállá piwo.

Come up, Yákhatu piwo or Kúwo.

Come down, Yákhatu piwo or Lúwo.

Come back = { Létoko piwo, or
return, { Létó.

Come again (repeat- { Anaíyo or
ing), { Ana-piwo.

Come once, Kwá bálá piwo.

Come twice, Nip pálá piwo.

Come thrice, Sap pálá piwo.

Come four times, Lep pálá piwo.

Come five times, Gnó pálá piwo.

Come six times, Rú pálá piwo.

Come seven times, Chá pálá piwo.

Come eight times, Yá pálá piwo.

Come nine times, Ghú pálá piwo.

Come ten times, Kwaddyum pálá piwo.

Come together, { Kwádo pine or ráne,
(place), { (verbs in plural).

Come at once, { Kwá bala pine, (pine is
(time), { plural).

Come near, Nentha piwo.

Come close to him, Wáke púmdi piwo.

Come apart, Hare piwo.

Come far away, Brába piwo.

Come with, Kwongkho piwo.

Come with me, Gó nung piwo.

Come alone, Giche piwo.

Come without { Go manthi piwo.

me, thee, him, { Ga manthi piwo.
Harem manthi piwo.

Come towards { Wáke lá piwo.

me, thee, him, { Ike lá piwo.
Ake lá piwo.

Come as far as this { Eke sambh piwo.

or here, that or { Meke sambh piwo.

there,

Come quickly, instantly, Bácheu piwo.

Come slowly, Wákha piwo.

Come by and by, { Ghyá kwángmi

piwo.

Come silently, Liba piwo.

Come noisily, { Bréso or Bresomami or

Brésoko*—piwo.

Come early, Bácheu piwo.

Come late, Wákha piwo.

Come at sun-rise, Namdhamna* piwo.

Come at sun-set, Nam wantana* piwo.

Come loiteringly, { Wakhawákhangwak-

koko* piwo.

Come over (by top), Khwátoko* piwo.

* These and all similars are imperative gerunds. See verbs. When the expression is imperative the gerund s-gu is affixed to the imperative form of the verb; when it is indicative, to the indicative form. Come loiteringly is having loitered, come. This is one of the many affinities with the Dravirian tongues.

| | | | |
|---|---|--|--|
| Come under by | { Háyn lang glúgnoko* beneath, { piwo. | Give mutually. Gi mose.† | |
| Come through (by middle), | { Alam láng piwo. | Hit mutually, Tyeum mose. | |
| Come between, | Alinbu láng piwo. | Kiss mutually, Leú mose. | |
| Come across, | { Glúgnoko piwo. { Glúso piwo | Kill mutually. Sá mose. | |
| Come | { this } side, { Yése hamba } pi- to } that } wo. | Give continually, Giso gno bwakko. | |
| Come constantly, | Pisogno bwakko. | Hit continually, Teupsogno bwakko. | |
| Come sometimes, | Káyikáyi piwo. | Sleep continually, Ipsogno-bwakko. | |
| Come ever, Sadai | { ráwo. { piwo. | Strike forcibly, Soktimi teuppo. | |
| Come never, Gyanaiyo | ma piwo. | Strike gently, Wákha teuppo. | |
| Never come again, Gyanaiyo ána má piwo. | | A house, Khyim. | |
| Come to, at, this side, Yékhola piwo. | | Of a house, Khyim ke. Khyim diin. | |
| Come by this side, Yékhola piwo. | | To a house, a house, { Khyim (no sigus.) | |
| Come to, at, that side, Mékhola piwo. | | In a house, Khyim di. | |
| Come by that side, Mékhola piwo. | | From a house, Khyim ding. | |
| Come on the right, Jumola piwo. | | By (inst.) house, Khyim mi. | |
| Come by the right, Junroláng piwo. | | Into (inside) house, Khyimá gwáre. | |
| Come on the left, Pérola piwo. | | Out of (outside) house, Khyimá tola. | |
| Come by the left, Péroláng piwo. | | As far as house, Khyim sambh. | |
| Come to the east, Namdhaydi khálá piwo. | | Towards or at the house, Khyim lá. | |
| Come from the { Nam wamdi kháláng west, { piwo. | | From vicinity of house, Khyim láng. | |
| Come towards the house, Khyim lá piwo. | | Before the house, in { Khyim á gnalla. front, | |
| Come from towards the { Khyim láng house, { piwo. | | Behind the house, { Khyim á notha. in rear of, | |
| Go towards the plains { Dhepdelá láwo or diwo. | | On the house { Khyim a tauredi. (touching), | |
| Go as far as Nepal, Népal sambh láwo. | | Above the house { Khyim ding hatyu. (remote), | |
| Give a little, Akachi giwo. | | Under, { the house (close), { Khyim háyu. Beneath, | |
| Give much, Eko giwo. | | Below the house { Khyim ding háyu. (apart), | |
| Give secretly, Khenso giwo. | | From under { Khyim ke háyu láng or house, { hayu ding. | |
| Give openly, Kwainso páso giwo. | | In the under { Khyim ke háyu { lá. of house, { di. ‡ | |
| Give gladly, Gyarscho giwo. | | In the above of { Khyim á taure di or house, { lá. | |
| Give sulkily, Má gyarscho giwo. | | Near the house, § { Khyim ke nentha or Khyim nentha. | |
| Give to-day, Ána giwo. | | | |
| Give to-morrow, Dilla giwo. | | | |
| He gave yesterday, Sanamti gipta. | | | |

* These and all similars are imperatival gerunds. See verbs. When the expression is imperative the gerund sign is affixed to the imperative form of the verb: when it is indicative, to the indicative form. Come loiteringly is having loitered, come. This is one of the many affinities with the Dravidian tongues.

† Mose dual of mowo, which apart = fight: in composition of several verbs = do, make.

‡ Lá expresses vicinity. Khyim la, near, towards, at, the house: whence la-m of vicinity and la-ng, from vicinity. So Di expresses inness, khyim di, in the house: whence di-m, of in and di-ng from in. M final is attributive. See adjectives and participles e. g. piba-me, I who come, I the comer, and kwágná me, the other one, and lala-m, red.

§ Khyim nentha = the house is near and near the house, but the latter is better with genitive sign: so also of khyim pumdi. Khyim á pumdi, the house its side in, also prevents the equivocal and is the true form for near the house. Nentha having lost its sense as a noun cannot take the á. Nouns of place, however, take diin rather than á, as Khyim diin pumdi, literally, house in of side in.

Far from } Khyim ding brába.
 house, }
 At the house, { Khyim á pumdi.
 { Khyim nenthá.
 On account of house, Khyim dáso.

In lieu of house, or } Khyim á phile.
 In exchange for house, }
 Through the house, Khyim á limhu láng.
 Beyond the house, { Khyim á gualla, =
 house its beyond.

BAHING PREPOSITIONS.

At this time, Yekhonadi.
 At that time, Myekhonadi.
 At this place, Yekedi.
 At that place, Myekedi.
 In this year, Yem tho'di.
 In that year, Myem tho'di.
 In a little while, Ghyer Kwongmidi.
 During, pending { Yem thomálá thenm.
 this year, { Yem — thobwáná.
 Pending his coming, Haremma pi thim.
 At home, Khyim di.
 In, within, the house, Khyim gwáre.
 In the wilderness, Sabala di.
 In my hand, Wá gu di.
 In, at, Dorjiling, Dorjiling di.
 Go into the house, Khyim gwáre láwo.
 In me, in thee, { Godi. *Wáke di.
 in him, { Gadi. Ikedi.
 { Haremdi. Akedi.
 He gave to me, Go giwa.
 He took it { Go ding-
 from me, { Ga ding- } blapta.
 thee, him, { Haremding- }
 He struck thee, Ga teupta.
 Come into the house, Khyim gwáre piwo.
 Go into the house, Khyim gwáre láwo.
 Go into the water, Pwáku di wogno.
 Come out of the { Pwáku ding glugno.
 water, }
 The inside of the house, Khyim á golá.
 The outside of the house, Khyim á tolá.
 Come from the outside { Khyim ke á
 of the house, { tolang piwo.
 Come from the inside { Khyim á golang
 of the house, { glugno.
 Come out from { Khyim ding á tolá piwo
 the house, { or Khyim ding glugno.
 Go with me, Go nung láwo.
 Sit by me, Wake pumdi bwakko.

Come near me, Wake pumdi piwo.
 Sit beside me, Wake lá bwakko.
 Sit on my knee, Wa phyemtodi bwakko.
 Sleep in his bosom, Aphyemtodi ipo.
 Put on thy shoulder, I balamdi jeullo.
 Throw in or into the { Me di piko.
 fire, { Mi gware piko.
 Put on the fire, Mi taure jeullo.
 Take off from the fire, Mi taureng bláwo.
 Put on, upon, the table, Mej táure jeullo.
 Take off from the { Mej taureng bláwo.
 table, }
 Get on, or mount, the { Ghora taure
 horse, { wogno.
 Get off, or dismount { Ghora taureng
 from, the horse, } glugno.
 Put on the horse { Ghora taure jeullo.
 (goods), }
 Take off from the { Ghora taureng glun-
 horse (goods), { do or bláwo.
 On the head, Piya taure.
 Under the feet, { Kholi yeu.†
 { Kholi gwayeu.
 Put your cap on { Itáki i piya taure
 your head, { jeullo.
 Put grass under { A kholi gwayeu (ni-
 his feet, { chasmen) jim jeullo.
 Above, higher than, his { A piya ding
 head, { hateu.
 Beneath, lower than, { Wa kholi ding
 my feet, { hayeu.
 Above your house { Ikhyim ding haten
 is the canton- { la tilanga bwagdi-
 ment, { kha.
 Below your house { I khyim ding háyeu
 is the bazar, { la ledikha jyap-
 dikha.
 Above the mouth is { Sheö hateu la neu
 the nose, { bwa.

* More usual and correct perhaps is the inflective form Wake. But it is also equal my, Wakedi, in me or mine and Wakeding, from me or from my.

† Gware = in, Gwayeu = under. To the last answers ha-yeu the one, meaning what touches, the other, what touches not, but lies below : so taure and ha-yeu, as to what is above.

Below the mouth { Sheö ha yeu la
is the chin, { yóli bwa.
To, as far as, Nerá. Pundi.
As far as him, { Harem pundi.
As far as him, { Harem néra.
As far as Nepal, Nepal pundi.
Towards Nepal, Nepal pumla. Nepal la.
North of Nepal, Nepal ding hateu la.
Near Nepal, Nepal nentha.
Far from Nepal, Nepal ding hrába.
Towards night, Namringua (day setting).
Towards morn- { Nam sona (day being
ing, { born).
In the night, Teugnachidi.
In the day, Namtidi.
Cruel towards his { Tamitawake la deu-
children, { kha giba.
Be kind towards { Wake la neuwo.
me and mine, { Wa ta ke la neuwo.
Sit above me, Wake ding hateu la bwako.
Sit between us { Wasike alimbu di
two, { bwako.
Sit below him, Ake ding hayeu la bwako.
Put on me, Wake taure jyúlo.
Put on him, Ake taure jyúlo.
The water comes from { Pwáku hateu
above and goes be- { lang yú, ba-
low, { yeu la lá.
On the top of the { Syerte á gware di.
hill, {
In the midst of the hill, Syerte á limbudi.
At the bottom of the hill, Syerte a pundi.
From top of hill, Syerte á gware ding.
From middle of hill, Syerte á limbudi.
From the bottom of { Syerte á pum
the hill, { ding.
He dwells below { Wake ding hayeu la
me, { bwá.
He dwells above { Wake ding hateu la
me, { bwá.
Sit on me, Wake taure bwako.
Press under me, Wake hayeu lam chimna.
(Guari = hill top; Jujeu = tree top
or house top).
Underneath, under { Khosingba gwayeu
the chair, { or a gwayeu.
Above, upon, the { Gu taure or, Gu á
hand, { taure.
Put under, below, { Mej á gwayeu jy
the table, { ulo.
Take out from under { Mej á gwá yeung
the table, { bláwo.
Go through the { Lapcho lang láwo or
door, { Lapcho á limbudi lang
láwo.
Come through { Khyim gwárim piwo or
the house, { Khyim á gwalang piwo.
Go through the hole, Alam lang glugno.

Go through the river { Pwáku di gwakso
(wading), { glugno.
Go over the couch, { Ipdikha khwakso
láwo.
Go over the river in { Dunga di woso
boat, { glugno.
Go under the couch, { Ipdikha likso
glugno.
Come with me, Go nung piwo.
Go with him, { Am-
or } uung láwo.
Harem- }
Why should I go { Ga nung márcho
with thee, { láгна.
Go without me, Go manthi láwo.
Strike with force, Sokti mi teupo.
Strike without force, Sokti manthi teupo.
Sit before me, Wa gnalla di bwako.
Sit behind me, Wa notha di bwako.
Before, behind { Lapcho á gnalla di,
the door, { Lapcho á notha la.
Opposite, Vis-a- { Wa gnalla la.
Vis-me, { Wa gnalla di.
Sit at my side, Wake pundi bwako.
Towards his side, Ake á pumla.
In the middle, Alimbu di.
To, at, the side, Apundi.
Before night, { Namrikso gnalla.
Teugnachi dyumtheum.
Nammá riktheum.
Nammá wartheum.
Nam rikcho beladi.
At night fall, { Nam- { ringna.
wamtana.
Nam wanchi beladi.
After night fall, { Nam-wamso { notha.
riskso
Nam wamtako,
Nam riktako.
Since dawn, Didila mekeng.
Before dawn, Didila gnalla.
After dawn, Didila notha.
Since I came, Gopitina mekeng.
Before my arrival, Gojokpicho gnalla.
After my arrival, Gojokpicho notha.
After to-morrow, Dilla mekeng.
Before to-morrow, Dilla ma dyumtheu.
By night fall, { Nam ringna.
Nam wamtana.
Until night or { Teugnachi sambh.
Up to night { Nam wamtana sambh.
Towards the house, Khyim lá.
Towards me, Wake lá.
Towards night, Nam rikcho páwana.
Towards dawn, { Teugnachi lána.
Nam dhamna.
At dawn, Nam dhamna.
During the night, Teugnachi dyumna.

Why, { Márcho.
 { Máraña.
 Because, since, { Yem paptako.
 As, { Myem paptako.
 Yes, Aje (true).

No, Máá, (it is not).

Verbal negative, Má.
 Verbal prohibitive, Má.
 Noun privitive, Má.

BAHING ADVERBS.

Adverbs of time.

| | |
|--|--|
| To-day, Ána. | How often, Gisko pala. |
| To-morrow, Dillá. | Sometimes, No word. |
| Yesterday, Sanamti. | Once or twice, Kwá bále nippále. |
| Day after to-morrow, Niti. | Once, Kwá bále. |
| Day before yesterday, Nikhabol. | Twice, Nippále. |
| This year, Yemthoche. | Thrice, Sápále. |
| Last year, Sántho. | Four times, Seppále. |
| Year before last, Niware. | Five times, Gnó pále. |
| Coming year, Máta. | Six times, Rú pále. |
| Year after that, Niwa. | Seven times, Chá pále. |
| Now, Yékhona. | Eight times, Yá pále. |
| Then, Mékhona. | Nine times, Ghú pále. |
| When? Gyéna. | Ten times, Kwaddyum pále. |
| When, rel., Gyéna. | Early, Bachem pasomami. |
| Then, correl., Mékhona. | Late, Wákha pasomami. |
| Instantly, Bachéu. | In the day, Nam bwoktáná. |
| By and by, Gyer kwongmi. | At night, { |
| At once, at one time, Kwongkhó. | In the night, } Tenguáchi dyumtana. |
| Before, priorly, Gnalla. | All day, Nam dongmókho. |
| After, afterwards, Nóla. | Daily, Namtike namti. |
| Since, Gyéna. | At sunrise, Namdhamua. |
| Till, until, No word. It is expressed by theum added to the root and the negative, or by the negative gerund.* | At cock crow, { Bá griná. |
| Till now, { Ána sambh (sambh is Khas.) | At dawn, Hauhaudyumchopawana. |
| Hitherto, } | At sunset, { Nam wamtana. |
| Till then, Metti namti. | At dusk, No word. |
| Till when? how long? Giskonamti. | At night fall, { Nam rigna. |
| Formerly, long ago, Nyéshé. | From night till { Tenguachi dyumna. |
| At present, now a days, Anampilli. | morn, { Teugnachi mekeng |
| Whilst, Mim, added to a verb, or the gerund simply.† | didila sambh. |
| Henceforth, { Anamekeng. | At noon, Namhelschodi. |
| Hereafter, } | At midnight, Teugnachi helschodi. |
| Thenceforth, { Memnamtimekeng. | To-morrow morning, Dilla didiladi. |
| Thereafter, } | Yesterday at night, Sanamtiten gnachidi. |
| Ever, No word. | In two or three days, Nikkha sakkhá. |
| Never, Genaiyo. | In three or four days, Sakkha sekkha. |
| Often, Yáko pala. | In four or five days, Sekkha gnokkha. |
| | How long? Gisko namti. |

* e. g. stay till I come, gómá pignana, or gó má pi theum, bwákó.

† e. g. whilst he lives I will not go, Harem bleumim gó má lágna. Whilst he was walking he fell down. Harem gwaktana dokta.

As long, rel. Gisko namti.
 So long, correl. Metti namti.
 Again, repeatedly, Anáiyó.
 Again, returning, Létako.

Adverbs of Place.

Here, Yéke.
 There, Myéke.
 Where? Gyéke.
 Where, rel. Gyéke.
 There, correl. Méke. Mekegnó.
 Here and there, Hárela yesela.
 Hither, } Yékholá.
 Hereward, }
 Thither, } Myékholá.
 Thereward, }
 Hence, Yékeng.
 Thence, Myékeng.
 Whence? Gyélang.
 Whence, rel. Gyélang.
 Thence, correl. Myékeng.
 By what way? Agyem lamlang.
 By this way, Yem lamlang.
 By that way, Myem lamlang.
 How near? Gisko nentha.
 How far? Gisko brába.
 How far? i. e. to } Gyéla (where).
 what limit, }
 This far, Yeke (here).
 That far, Myéke (there).
 Near, Nentha.
 Far, Brába.
 How near? Gisko nentha.
 How far? Gisko brába.
 From after, Brába lang.
 From near, Nentha lang.
 In the near, Nentha di.
 In the far, Brába di.
 This near, Yeti nentha.
 That near, Myeti nentha.
 Nearer, { Anaiyo nentha.
 { Yemdinganaiyo nentha.
 Nearest, very { Hauppeding nentha.
 near, { Thé nentha.
 Rather near, Dekho nentha.
 Rather far, Dekho brába.
 Very far, Thé brába.
 Up or upwards, (an accli- { Hateula.
 vity whence water comes, { Yakayeula.
 From up, from above } Hateu lang.
 of slope, }

From down, from below } Hayeu lang.
 of slope, }
 Up (perpendicular), Taure.
 Down (ditto), { Gwáre.
 { Gwáyeu.*
 { Apumyeu.
 From above, perpendicular, Taureng.
 From below, ditto, { Apumyeung.
 { Gwáreng.
 { Gwáyeung.
 Upwards, ditto, Taurela.
 Downwards, ditto, Gwáyeula. Yeula.
 Upwards (on slope), Hateula.
 Downwards (on slope), Hayeula.
 On the top, Ajnjudi.
 In, at, the bottom, Apumdi.
 From the top, { Ajujuding.
 { Ajnu lang.
 From the bottom, Apunding.
 Out (issuing), Gluko. Glutako.
 In (entering), Wóko. Wotako.
 Out, outside, Átola (with noun).
 In, within, Gwáre. Agware.
 Towards this side, Yesehamba la.
 Towards that side, Hare hamba la.
 On this side, Yese hamba di.
 On that side, Hare hamba di.
 On both sides, { Hare hamba. } di.
 { Yese hamba. }
 Round, Khirsoko.
 Before, Gnalla.
 After, Nótha.
 Opposite, vis a vis, Gnalla.
 Abreast, Kwongkho.
 Straight onwards, No word.
 Onwards, forwards, Gnalla lá.
 Backwards, Nothalá.

*Adverbs of manner, cause, quality,
 quantity, &c.*

How? in what { Yékho.
 way, { Yekhopasa.
 Thus, in that { Myékho.
 way, { Myekhopasa.
 Why? for what reason, { Gyegná.
 { Mára gná.
 { Marha.
 For this reason, Yé gna?
 For that reason, Myé gna?
 How? what like? Gyekhome.
 This like, Yekhome.

* Taure and gwáre are chiefly prepositions and the latter means rather in below. Gwáyeu is better for the latter, or yeu. But none of them quite answers. The verbs express the meanings.

That like, Myekhome.

How much? how many? Gisko.

As many, as much, Gisko.

So many, so much, Metti.

How often? Gisko pála.

How great? Gisko gnólo.

How small? Gisko yáke.

Well, rightly, { Neuba pawoko.
Neuba paso.
Neuba pasomami.
Neuba pawako.
Neuba paptako.*

Ill, badly, wrongly, Máneuba páso, &c.

Wisely, { Jokso and Joksomami, &c.
Teuso and Teusomami, &c.*

Foolishly, { Majoksomami.
Mateusomami.†

Hungrily, Solimi.

Thirstily, Pwáku dwaktimi.

Angrily, { Soksomi pawoko.
Sokso paso, &c.

Gladly, { Gyersimi. Gyersipaso.
Joyfully, { Gyersoko.

Strongly, Saktini. Saktipawoko, &c.

Weakly, Sakti manthimi.

Gently, Wákha paso or pawoko, &c.

Noisily, { Syandami yandapaso or pa-
soko or pawoko.

Silently, Liba dyumso.

With blows, Teupsomami. Teuptako.

Evenly, on level with, Deuso.

Evenly, straightly, smoothly, Deuso.

Much, a great } Dhékwóng.
deal, } Dhékong.

A little, Dékho.

Neither more nor less, Mádékho ma thé.

Less, Dékho.

More, Thé.

Again (afresh), Gapti. Anaiyo.

Back (the same), Leti. Letako.

Thoroughly, { Theumsomami.

Completely, { Yáko. Hauppe.

Partially, { Dekho bwaso.

{ Dékho jyulsomami.

{ Dékho jyultako.

Heavily, { Helpasoko.
Helpasomami.
Helpattako.
Helpawako.
Hampaso.
Lightly, { Hampasomami.
Hampattako. Hampawoko.
Khipso.
Tightly, { Khipsomami.
Khiptako.
Thyelvím paso.
Slackly, { Thyelvím pasomami.
Thyelvím paptako.
Thyelvím pawako.
Greatly, Dhekong.
Slightly, trivially, Dékho.
In cowardly way, { Gnimami. Gnitako.
Gniko.
Bravely, { Gnima manthimi.
Mágniko.
Mágnitako.
Modestly, Gnunemi. Gnune pawoko.
Impudently, Gnune manthi.
Secretly, Khleuscho mami.
Openly, { Kwainsopascho.
Kwainsopaschomami.
Jestingly, Rischomami.
Seriously, Ajedaso mami.
Slowly, Wákha.
Hastily, { Gruksomami.
Grukso.
Gruktako.
Mortally, Byaktam sambh.
Skin deep, Akokte sambh.
Together, Kwongkho.
Separately, Wang wang.
Singly or one by one, { Kwong kwong paso.
Solitarily, Igicha.
With a companion, Warcha nung.
A foot, Gwakoko. Gwakso.
On horse back, Wognoko.
Truly, { Aje dásomami.
Aje dyumsomami.
Falsely, Lumochelso.

* All these are gerundial, like the great majority of the adverbs. But if imperation is involved, the gerund sign is added to the imperative, not to the indicative.

† Or with main verb in indicative, ma jogako for present and ma juktako for preterite sense. See note at "wisely." This is merely the negative form of the same word obtained by prefixing the particle of negation or má.

(The remainder in the next volume.)

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of June, 1857.*

Latitude 22° 33' 1" North. Longitude 88° 20' 34" East.

Height of the Cistern of the Standard Barometer above the Sea level, 18.11 feet.

Daily Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

| Date. | Mean Height of the Barometer at 32° Fahr. | Range of the Barometer during the day. | | | Mean Dry Bulb Thermometer. | Range of the Tempera- ture during the day. | | |
|-------|---|---|---------|---------|-------------------------------|---|------|-------|
| | | Max. | Min. | Diff. | | Max. | Min. | Diff. |
| | Inches. | Inches. | Inches. | Inches. | o | o | o | o |
| 1 | 29.569 | 29.648 | 29.490 | 0.158 | 86.7 | 92.8 | 81.4 | 11.4 |
| 2 | .545 | .612 | .461 | .151 | 86.9 | 92.4 | 83.6 | 8.8 |
| 3 | .551 | .616 | .481 | .135 | 86.9 | 92.2 | 81.6 | 10.6 |
| 4 | .555 | .599 | .472 | .127 | 87.0 | 92.9 | 80.3 | 12.6 |
| 5 | .604 | .655 | .534 | .121 | 84.9 | 93.8 | 80.6 | 13.2 |
| 6 | .627 | .663 | .581 | .082 | 85.8 | 93.2 | 81.3 | 11.9 |
| 7 | <i>Sunday.</i> | | | | | | | |
| 8 | .567 | .625 | .485 | .140 | 87.8 | 95.0 | 83.8 | 11.2 |
| 9 | .534 | .578 | .475 | .103 | 88.7 | 96.0 | 82.8 | 13.2 |
| 10 | .565 | .613 | .494 | .119 | 89.3 | 97.2 | 83.4 | 13.8 |
| 11 | .620 | .675 | .572 | .103 | 89.0 | 96.2 | 83.4 | 12.8 |
| 12 | .610 | .662 | .525 | .137 | 87.7 | 95.8 | 78.0 | 17.8 |
| 13 | .584 | .635 | .509 | .126 | 86.6 | 92.5 | 82.0 | 10.5 |
| 14 | <i>Sunday.</i> | | | | | | | |
| 15 | .636 | .707 | .561 | .146 | 87.0 | 94.6 | 82.0 | 12.6 |
| 16 | .598 | .675 | .505 | .170 | 86.7 | 94.0 | 81.4 | 12.6 |
| 17 | .557 | .607 | .489 | .118 | 86.1 | 94.6 | 81.7 | 12.9 |
| 18 | .527 | .588 | .467 | .121 | 85.6 | 93.6 | 82.0 | 11.6 |
| 19 | .468 | .512 | .369 | .143 | 84.2 | 90.0 | 82.0 | 8.0 |
| 20 | .396 | .448 | .316 | .132 | 85.5 | 90.6 | 80.8 | 9.8 |
| 21 | <i>Sunday.</i> | | | | | | | |
| 22 | .302 | .353 | .249 | .104 | 81.5 | 86.1 | 79.1 | 7.0 |
| 23 | .392 | .509 | .316 | .193 | 82.4 | 88.3 | 78.2 | 10.1 |
| 24 | .549 | .618 | .493 | .125 | 83.3 | 87.4 | 79.0 | 8.4 |
| 25 | .573 | .615 | .502 | .113 | 84.5 | 91.3 | 80.6 | 10.7 |
| 26 | .533 | .575 | .477 | .098 | 82.3 | 88.8 | 79.0 | 9.8 |
| 27 | .488 | .540 | .442 | .098 | 81.2 | 88.4 | 77.0 | 11.4 |
| 28 | <i>Sunday.</i> | | | | | | | |
| 29 | .380 | .413 | .334 | .079 | 80.2 | 82.5 | 78.8 | 3.7 |
| 30 | .421 | .459 | .351 | .108 | 79.5 | 84.5 | 77.4 | 7.1 |

The Mean height of the Barometer, as likewise the Mean Dry and Wet Bulb Thermometers are derived from the twenty-four hourly observations made during the day.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of June, 1857.*

Daily Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

| Date. | Mean Wet Bulb Thermo- meter. | Dry Bulb above Wet. | Computed Dew Point. | Dry Bulb above Dew Point. | Mean Elastic force of Vapour. | Mean Weight of Vapour in a cubic foot of Air. | Additional Weight of Va- pour required for com- plete saturation. | Mean degree of Humidity, complete saturation be- ing unity. |
|-------|---------------------------------|---------------------|---------------------|------------------------------|----------------------------------|--|---|---|
| | o | o | o | o | Inches. | T. gr. | T. gr. | |
| 1 | 80.9 | 5.8 | 78.0 | 8.7 | .940 | 10.01 | 3.17 | .076 |
| 2 | 81.3 | 5.6 | 78.5 | 8.4 | .955 | .18 | .07 | .77 |
| 3 | 81.4 | 5.5 | 78.6 | 8.3 | .958 | .21 | .04 | .77 |
| 4 | 82.1 | 4.9 | 79.6 | 7.4 | .989 | .54 | 2.75 | .79 |
| 5 | 78.7 | 6.2 | 75.6 | 9.3 | .871 | 9.31 | 3.18 | .75 |
| 6 | 80.4 | 5.4 | 77.7 | 8.1 | .931 | .94 | 2.89 | .78 |
| 7 | <i>Sunday.</i> | | | | | | | |
| 8 | 82.1 | 5.7 | 79.2 | 8.6 | .976 | 10.37 | 3.23 | .76 |
| 9 | 82.2 | 6.5 | 78.9 | 9.8 | .967 | .26 | .70 | .74 |
| 10 | 82.6 | 6.7 | 79.2 | 10.1 | .976 | .35 | .86 | .73 |
| 11 | 82.0 | 7.0 | 78.5 | 10.5 | .955 | .12 | .96 | .72 |
| 12 | 81.0 | 6.7 | 77.6 | 10.1 | .928 | 9.87 | .69 | .73 |
| 13 | 80.2 | 6.4 | 77.0 | 9.6 | .910 | .69 | .45 | .74 |
| 14 | <i>Sunday.</i> | | | | | | | |
| 15 | 80.8 | 6.2 | 77.7 | 9.3 | .931 | .92 | .37 | .75 |
| 16 | 80.5 | 6.2 | 77.4 | 9.3 | .922 | .83 | .35 | .75 |
| 17 | 80.5 | 5.6 | 77.7 | 8.4 | .931 | .94 | .01 | .77 |
| 18 | 80.5 | 5.1 | 77.9 | 7.7 | .937 | 10.00 | 2.76 | .78 |
| 19 | 80.5 | 3.7 | 78.6 | 5.6 | .958 | .26 | 1.98 | .84 |
| 20 | 80.3 | 5.2 | 77.7 | 7.8 | .931 | 9.94 | 2.78 | .78 |
| 21 | <i>Sunday</i> | | | | | | | |
| 22 | 78.3 | 3.2 | 76.7 | 4.8 | .902 | .70 | 1.61 | .86 |
| 23 | 78.5 | 3.9 | 76.5 | 5.9 | .896 | .63 | .98 | .83 |
| 24 | 79.5 | 3.8 | 77.6 | 5.7 | .928 | .95 | .98 | .83 |
| 25 | 80.1 | 4.4 | 77.9 | 6.6 | .937 | 10.02 | 2.33 | .81 |
| 26 | 79.4 | 2.9 | 77.9 | 4.4 | .937 | .08 | 1.50 | .87 |
| 27 | 78.8 | 2.4 | 77.6 | 3.6 | .928 | 9.99 | .22 | .89 |
| 28 | <i>Sunday.</i> | | | | | | | |
| 29 | 78.2 | 2.0 | 77.2 | 3.0 | .916 | .89 | 0.99 | .91 |
| 30 | 77.0 | 2.5 | 75.7 | 3.8 | .873 | .43 | 1.23 | .89 |

All the Hygrometrical elements are computed by the Greenwich constants.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of June, 1857.*

Hourly Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

| Hour. | Mean Height of the Barometer at 32° Fahr. | Range of the Barometer for each hour during the month. | | | Mean Dry Bulb Thermometer. | Range of the Tempera- ture for each hour during the month. | | |
|----------------|---|--|---------|---------|-------------------------------|---|------|-------|
| | | Max. | Min. | Diff. | | Max. | Min. | Diff. |
| | Inches. | Inches. | Inches. | Inches. | o | o | o | o |
| Mid- night. | 29.536 | 29.651 | 29.337 | 0.314 | 82.4 | 85.2 | 78.7 | 6.5 |
| 1 | .524 | .642 | .301 | .341 | 82.2 | 85.0 | 78.6 | 6.4 |
| 2 | .514 | .635 | .304 | .331 | 82.0 | 84.8 | 78.6 | 6.2 |
| 3 | .509 | .635 | .297 | .338 | 81.9 | 85.5 | 78.4 | 7.1 |
| 4 | .510 | .638 | .274 | .364 | 81.8 | 84.2 | 78.2 | 6.0 |
| 5 | .523 | .646 | .278 | .368 | 81.7 | 84.2 | 78.2 | 6.0 |
| 6 | .543 | .657 | .289 | .368 | 81.9 | 84.6 | 78.2 | 6.4 |
| 7 | .558 | .687 | .305 | .382 | 82.8 | 85.4 | 79.0 | 6.4 |
| 8 | .567 | .698 | .320 | .378 | 84.6 | 87.8 | 80.0 | 7.8 |
| 9 | .573 | .707 | .324 | .383 | 86.6 | 90.6 | 79.2 | 11.4 |
| 10 | .573 | .692 | .315 | .377 | 87.9 | 92.6 | 80.2 | 12.4 |
| 11 | .565 | .680 | .312 | .368 | 89.4 | 94.1 | 80.4 | 13.7 |
| Noon. | .548 | .662 | .301 | .361 | 90.5 | 95.0 | 80.2 | 14.8 |
| 1 | .530 | .637 | .295 | .342 | 90.7 | 96.4 | 81.3 | 15.1 |
| 2 | .513 | .615 | .274 | .341 | 90.0 | 97.2 | 78.0 | 19.2 |
| 3 | .495 | .598 | .268 | .330 | 89.6 | 97.2 | 78.3 | 18.9 |
| 4 | .473 | .584 | .249 | .335 | 88.5 | 96.4 | 78.0 | 18.4 |
| 5 | .473 | .620 | .259 | .361 | 87.7 | 94.8 | 77.8 | 17.0 |
| 6 | .484 | .611 | .277 | .334 | 86.2 | 92.0 | 77.0 | 15.0 |
| 7 | .500 | .608 | .303 | .305 | 85.0 | 89.6 | 77.4 | 12.2 |
| 8 | .526 | .635 | .327 | .308 | 83.9 | 88.0 | 78.0 | 10.0 |
| 9 | .539 | .663 | .335 | .328 | 83.3 | 86.7 | 78.8 | 7.9 |
| 10 | .552 | .663 | .353 | .310 | 83.0 | 86.8 | 79.0 | 7.8 |
| 11 | .550 | .649 | .349 | .300 | 82.7 | 85.6 | 79.0 | 6.6 |

The Mean height of the Barometer, as likewise the Mean Dry and Wet Bulb Thermometers are derived from the observations made at the several hours during the month.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of June, 1857.*

Hourly Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

| Hour. | Mean Wet Bulb Ther- moneter. | Dry Bulb above Wet. | Computed Dew Point. | Dry Bulb above Dew Point. | Mean Elastic Force of Vapour. | Mean Weight of Va- pour in a cubic foot of Air. | Additional Weight of Vapour required for complete satu- ration. | Mean degree of Hu- midity, complete saturation being unity. |
|----------------|---------------------------------|---------------------|---------------------|------------------------------|----------------------------------|---|--|--|
| | o | o | o | o | Inches. | T. gr. | T. gr. | |
| Mid- night. | 78.9 | 3.5 | 77.1 | 5.3 | 0.913 | 9.82 | 1.79 | 0.85 |
| 1 | 79.0 | 3.2 | 77.4 | 4.8 | .922 | .91 | .63 | .86 |
| 2 | 79.0 | 3.0 | 77.5 | 4.5 | .925 | .94 | .53 | .87 |
| 3 | 79.0 | 2.9 | 77.5 | 4.4 | .925 | .96 | .48 | .87 |
| 4 | 79.0 | 2.8 | 77.6 | 4.2 | .928 | .99 | .41 | .88 |
| 5 | 79.0 | 2.7 | 77.6 | 4.1 | .928 | .99 | .38 | .88 |
| 6 | 79.1 | 2.8 | 77.7 | 4.2 | .931 | 10.02 | .42 | .88 |
| 7 | 79.7 | 3.1 | 78.1 | 4.7 | .943 | .12 | .63 | .86 |
| 8 | 80.4 | 4.2 | 78.3 | 6.3 | .949 | .16 | 2.23 | .82 |
| 9 | 81.2 | 5.4 | 78.5 | 8.1 | .955 | .18 | .96 | .78 |
| 10 | 81.5 | 6.4 | 78.3 | 9.6 | .949 | .07 | 3.57 | .74 |
| 11 | 82.1 | 7.3 | 78.4 | 11.0 | .952 | .08 | 4.17 | .71 |
| Noon. | 82.5 | 8.0 | 78.5 | 12.0 | .955 | .10 | .62 | .69 |
| 1 | 82.4 | 8.3 | 78.2 | 12.5 | .946 | 9.98 | .82 | .67 |
| 2 | 82.0 | 8.0 | 78.0 | 12.0 | .940 | .95 | .55 | .69 |
| 3 | 81.8 | 7.8 | 77.9 | 11.7 | .937 | .92 | .41 | .69 |
| 4 | 81.5 | 7.0 | 78.0 | 10.5 | .940 | .97 | 3.91 | .72 |
| 5 | 80.9 | 6.8 | 77.5 | 10.2 | .925 | .84 | .72 | .73 |
| 6 | 80.3 | 5.9 | 77.3 | 8.9 | .919 | .80 | .19 | .75 |
| 7 | 80.0 | 5.0 | 77.5 | 7.5 | .925 | .88 | 2.65 | .79 |
| 8 | 79.5 | 4.4 | 77.3 | 6.6 | .919 | .84 | .29 | .81 |
| 9 | 79.4 | 3.9 | 77.4 | 5.9 | .922 | .89 | .04 | .83 |
| 10 | 79.4 | 3.6 | 77.6 | 5.4 | .928 | .97 | 1.85 | .84 |
| 11 | 79.3 | 3.4 | 77.6 | 5.1 | .928 | .97 | .75 | .85 |

All the Hygrometrical elements are computed by the Greenwich constants.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of June, 1857.*

Solar Radiation, Weather, &c.

| Date. | Max. Solar radiation. | Rain Gauge 5 feet above Ground. | Prevailing direction of the Wind. | General Aspect of the Sky. |
|-------|-----------------------|---------------------------------|-----------------------------------|--|
| | o | Inches. | | |
| 1 | 125.5 | .. | S. (high.) | Cloudy. |
| 2 | 129.0 | .. | S. (high.) | Cloudy. |
| 3 | .. | .. | S. (high.) | Cloudy. |
| 4 | .. | .. | S. (high before sunrise.) | Cloudy. |
| 5 | 119.0 | .. | S. (high 10 A. M. to 1 P. M.) | Cloudy. |
| 6 | 127.0 | .. | S. | Cloudy, also slightly drizzling at 8 P. M. |
| 7 | <i>Sunday.</i> | | | |
| 8 | 125.0 | .. | S. & S. W. | Scatd. clouds. [wards. |
| 9 | 130.0 | .. | S. | Scatd. ~i till 3 P. M. cloudless after- |
| 10 | 134.0 | .. | S. | Cloudless till 6 A. M. scatd. ~i & ~i till 4. P. M. cloudless afterwards. |
| 11 | 129.7 | .. | S. | Scatd. clouds. |
| 12 | 134.0 | 1.50 | S. | Scatd. clouds, also raining at 8 & 9 P. M. |
| 13 | 124.0 | .. | S. | Cloudy. |
| 14 | <i>Sunday.</i> | | | |
| 15 | 127.0 | 0.36 | S. | Cloudless till 5 A. M. scatd. clouds till 7 P. M. cloudless afterwards, also raining at 3 P. M. [wards. |
| 16 | 121.0 | .. | S. | Cloudless till 5 A. M. scatd. clouds after- |
| 17 | 127.8 | .. | S. | Cloudless till 6 A. M. cloudy afterwards, also a very loud clap of thunder followed by a little drizzling at 2 P. M. |
| 18 | 124.0 | .. | E. & S. E. | Cloudy. |
| 19 | .. | .. | E. & N. | Cloudless till 4 A. M. cloudy till 8 P. M. cloudless afterwards. |
| 20 | .. | .. | N. E. | Cloudless till 5 A. M. cloudy afterwards. |
| 21 | <i>Sunday.</i> | 0.75 | | |
| 22 | .. | .. | E. | Cloudy and occasionally raining. |
| 23 | .. | 0.61 | E. | Cloudy and constantly raining. |
| 24 | .. | 0.50 | S. | Cloudy and occasionally raining before noon. |
| 25 | 118.0 | .. | S. & S. W. | Cloudy. |
| 26 | .. | 1.28 | S. & S. E. & S. W. | Cloudy and also raining between 1 & 5 P. M. [10 P. M. |
| 27 | .. | 1.69 | S. W. & S. & W. | Cloudy and much rain between 1 & |
| 28 | <i>Sunday.</i> | 0.14 | | |
| 29 | .. | 0.96 | S. W. & W. | Cloudy and constantly raining. |
| 30 | .. | 2.51 | W. & S. W. | Cloudy & also raining between 1 & 4 P. M. |

~i Cirri, ~i Cirro strati, ~i Cumuli, ~i Cumulo strati, ~i Nimbi, ~i Strati
~i Cirro cumuli.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of June, 1857.*

MONTHLY RESULTS.

| | | | Inches. |
|---|----|----|---------|
| Mean height of the Barometer for the month, | .. | .. | 29.528 |
| Max. height of the Barometer occurred at 9 A. M. on the 15th, | .. | .. | 29.707 |
| Min. height of the Barometer occurred at 4 P. M. on the 22nd, | .. | .. | 29.249 |
| Extreme range of the Barometer during the month, | .. | .. | 0.458 |

| | | | ° |
|---|----|----|------|
| Mean Dry Bulb Thermometer for the month, | .. | .. | 85.3 |
| Max. Temperature occurred at 2 & 3 P. M. on the 10th, | .. | .. | 97.2 |
| Min. Temperature occurred at 6 P. M. on the 27th, | .. | .. | 77.0 |
| Extreme range of the Temperature during the month, | .. | .. | 20.2 |

| | | | ° |
|--|----|----|---------|
| Mean Wet Bulb Thermometer for the month, | .. | .. | 80.3 |
| Mean Dry Bulb Thermometer above Mean Wet Bulb Thermometer, | .. | .. | 5.0 |
| Computed Mean Dew-point for the month, | .. | .. | 77.8 |
| Mean Dry Bulb Thermometer above computed mean Dew-point, | .. | .. | 7.5 |
| | | | Inches. |
| Mean Elastic force of Vapour for the month, | .. | .. | 0.934 |

| | | | Troy grains. |
|---|----|----|--------------|
| Mean Weight of Vapour for the month, | .. | .. | 9.97 |
| Additional Weight of Vapour required for complete saturation, | .. | .. | 2.67 |
| Mean degree of humidity for the month, complete saturation being unity, | .. | .. | 0.79 |

| | | | Inches. |
|--|----|----|---------|
| Rained 15 days, Max. fall of rain during 24 hours, | .. | .. | 2.51 |
| Total amount of rain during the month, | .. | .. | 10.30 |
| Prevailing direction of the Wind, | .. | .. | S. |

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of June, 1857.*

MONTHLY RESULTS.

Table showing the number of days on which at a given hour any particular wind
blew, together with the number of days on which at the same hour when
any particular wind was blowing it rained.

| Hour. | N. | Rain on. | N. E. | Rain on. | E. | Rain on. | S. E. | Rain on. | S. | Rain on. | S. W. | Rain on. | W. | Rain on. | N. W. | Rain on. | Calm. | Rain on. |
|-----------|----|----------|-------|----------|----|--------------|-------|----------|----|----------|-------|----------|----|----------|-------|----------|-------|----------|
| | | | | | | | | | | | | | | | | | | |
| Midnight. | | | | | | | | | | | | | | | | | | |
| | | | | | | No. of days. | | | | | | | | | | | | |
| 1 | | | | | 3 | 1 | | | 18 | | 1 | | | | | | 3 | |
| 2 | | | | | 3 | | 1 | | 19 | | 1 | | | | | | 2 | |
| 3 | | | | | 3 | | 1 | | 19 | | 2 | | | | | | 1 | |
| 4 | | | | | 3 | | 1 | | 18 | | 3 | | | | | | | |
| 5 | 1 | | | | 2 | 1 | 1 | | 20 | 1 | 3 | | | | | | | |
| 6 | 2 | | 2 | | 1 | 1 | 1 | | 19 | 1 | 2 | | | | 1 | | | |
| 7 | 2 | | 2 | | 1 | | 2 | | 18 | 1 | 2 | | | | | | | |
| 8 | 1 | | 3 | | 1 | | 1 | | 17 | 1 | 1 | | 1 | 1 | | | | |
| 9 | 1 | | 1 | | 2 | 1 | | | 13 | | 5 | | | | 1 | | | |
| 10 | 2 | | 1 | | 3 | | | | 15 | | 4 | | 1 | 2 | | | | |
| 11 | | | 1 | | 2 | 1 | | | 15 | | 5 | | 1 | 1 | | | | |
| | | | | | 2 | 1 | | | 16 | 2 | 4 | | 2 | | | 1 | | |
| Noon. | | | 2 | | 1 | | | | 15 | | 5 | | 2 | | 1 | | | |
| 1 | | | 2 | | 2 | | 1 | | 15 | | 4 | | 2 | 2 | | | | |
| 2 | | | | | 5 | 2 | | | 17 | 1 | 2 | | 2 | 2 | | | | |
| 3 | | | | | 4 | 1 | 1 | 1 | 15 | 1 | 3 | | 3 | 1 | | | | |
| 4 | | | 1 | | 2 | | 3 | 1 | 14 | | 3 | | 1 | 2 | 1 | | | |
| 5 | | | 1 | | 2 | | 3 | 2 | 16 | | 3 | | 1 | 1 | | | | |
| 6 | | | 1 | | 3 | | 4 | 1 | 15 | | 2 | | 1 | 1 | | | | |
| 7 | | | 1 | | 5 | | 2 | | 14 | 1 | 3 | | 2 | 1 | | | | |
| 8 | 1 | 1 | 1 | | 5 | 2 | 2 | | 14 | | 2 | | 1 | 1 | | 1 | | |
| 9 | 1 | 1 | | | 6 | | 1 | | 15 | | 1 | | 2 | 2 | | 3 | | |
| 10 | 1 | | | | 5 | | | | 16 | | 2 | | 1 | 1 | | | | |
| 11 | 1 | | | | 5 | 1 | | | 18 | 1 | 1 | | 1 | | | | | |

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of June, 1857.*

On the 20th June, 1857, the Meteorological Observations after ten minutes intervals being taken at the Surveyor General's Office, they indicate the following circumstances.

| | | | |
|--|------------------------|-------|---------------------------------------|
| <i>Exact Time of Minimum Barometer, ..</i> | | h. m. | |
| | | A. M. | 4 30 |
| | | P. M. | 4 50 |
| | | | |
| Ditto | Maximum Barometer, .. | h. m. | |
| | | A. M. | 10 0 |
| | | P. M. | 10 50 |
| | | | |
| Ditto | Minimum Temperature, { | h. m. | |
| | | A. M. | Between 5 10 & 6 0 during |
| | | | the whole of which interval the ther- |
| | | | monometer stood at the same reading |
| | | | 80.8 which was the lowest tempera- |
| | | | ture during the day. |
| | | | |
| Ditto | Maximum Temperature, { | h. m. | |
| | | P. M. | at 20 past noon and also at 4 10, |
| | | | the thermometer standing at 90.8, |
| | | | at the former, and at 90.7 at the |
| | | | latter time. |

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of July, 1857.*

Latitude 22° 33' 1" North. Longitude 88° 20' 34" East.

feet.

Height of the Cistern of the Standard Barometer above the Sea level, 18.11

Daily Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

| Date. | Mean Height of the Barometer at 32° Fahr. | Range of the Barometer during the day. | | | Mean Dry Bulb Thermometer. | Range of the Tempera- ture during the day. | | |
|-------|---|---|---------|---------|-------------------------------|---|------|-------|
| | | Max. | Min. | Diff. | | Max. | Min. | Diff. |
| | Inches. | Inches. | Inches. | Inches. | o | o | o | o |
| 1 | 29.422 | 29.464 | 29.373 | 0.091 | 79.7 | 81.8 | 77.8 | 4.0 |
| 2 | .413 | .466 | .372 | .094 | 81.8 | 85.9 | 78.6 | 7.3 |
| 3 | .425 | .462 | .373 | .089 | 81.6 | 85.2 | 79.2 | 6.0 |
| 4 | .409 | .449 | .351 | .098 | 82.4 | 86.0 | 79.5 | 6.5 |
| 5 | <i>Sunday.</i> | | | | | | | |
| 6 | .381 | .426 | .328 | .098 | 81.3 | 84.8 | 79.3 | 5.5 |
| 7 | .466 | .544 | .396 | .148 | 81.7 | 85.3 | 78.8 | 6.5 |
| 8 | .543 | .595 | .501 | .094 | 83.1 | 87.2 | 79.4 | 7.8 |
| 9 | .563 | .598 | .499 | .099 | 83.7 | 87.2 | 80.4 | 6.8 |
| 10 | .528 | .575 | .478 | .097 | 84.1 | 90.0 | 81.2 | 8.8 |
| 11 | .516 | .560 | .444 | .116 | 82.0 | 84.2 | 80.2 | 4.0 |
| 12 | <i>Sunday.</i> | | | | | | | |
| 13 | .515 | .559 | .465 | .094 | 84.7 | 90.0 | 81.2 | 8.8 |
| 14 | .514 | .551 | .450 | .101 | 83.9 | 89.4 | 80.0 | 9.4 |
| 15 | .476 | .530 | .412 | .118 | 84.3 | 88.9 | 81.0 | 7.9 |
| 16 | .476 | .521 | .423 | .098 | 82.9 | 84.8 | 81.4 | 3.4 |
| 17 | .500 | .556 | .454 | .102 | 82.5 | 85.9 | 79.6 | 6.3 |
| 18 | .531 | .598 | .477 | .121 | 82.2 | 85.6 | 80.0 | 5.6 |
| 19 | <i>Sunday.</i> | | | | | | | |
| 20 | .584 | .628 | .541 | .087 | 82.3 | 85.3 | 80.6 | 4.7 |
| 21 | .575 | .626 | .512 | .114 | 81.7 | 84.0 | 79.6 | 4.4 |
| 22 | .594 | .645 | .543 | .102 | 80.6 | 86.6 | 77.2 | 9.4 |
| 23 | .642 | .684 | .597 | .087 | 79.5 | 81.6 | 77.4 | 4.2 |
| 24 | .678 | .732 | .636 | .096 | 81.3 | 87.5 | 78.2 | 9.3 |
| 25 | .663 | .714 | .582 | .132 | 82.9 | 88.9 | 79.0 | 9.9 |
| 26 | <i>Sunday.</i> | | | | | | | |
| 27 | .674 | .742 | .608 | .134 | 81.7 | 86.5 | 78.6 | 7.9 |
| 28 | .709 | .756 | .654 | .102 | 82.1 | 88.4 | 78.7 | 9.7 |
| 29 | .692 | .748 | .605 | .143 | 81.8 | 85.9 | 78.8 | 7.1 |
| 30 | .643 | .691 | .558 | .133 | 82.0 | 87.5 | 78.8 | 8.7 |
| 31 | .635 | .674 | .576 | .098 | 81.5 | 85.5 | 79.0 | 6.5 |

The Mean height of the Barometer, as likewise the Mean Dry and Wet Bulb Thermometers are derived from the twenty-four hourly observations made during the day.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of July, 1857.*

Daily Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

| Date. | Mean Wet Bulb Thermo- meter. | Dry Bulb above Wet. | Computed Dew Point. | Dry Bulb above Dew Point. | Mean Elastic force of Vapour. | Mean Weight of Vapour in a cubic foot of Air. | Additional Weight of Va- pour required for com- plete saturation. | Mean degree of Humidity, complete saturation be- ing unity. |
|-------|---------------------------------|---------------------|---------------------|------------------------------|----------------------------------|--|---|---|
| | o | o | o | o | Inches. | T. gr. | T. gr. | |
| 1 | 78.1 | 1.6 | 77.3 | 2.4 | .0919 | 9.94 | 0.78 | 0.93 |
| 2 | 79.5 | 2.3 | 78.3 | 3.5 | .949 | 10.20 | 1.20 | .90 |
| 3 | 79.6 | 2.0 | 78.6 | 3.0 | .958 | .32 | .02 | .91 |
| 4 | 80.3 | 2.1 | 79.2 | 3.2 | .976 | .50 | .11 | .90 |
| 5 | <i>Sunday.</i> | | | | | | | |
| 6 | 79.0 | 2.3 | 77.8 | 3.5 | .934 | .05 | .19 | .89 |
| 7 | 78.8 | 2.9 | 77.3 | 4.4 | .919 | 9.90 | .47 | .87 |
| 8 | 80.0 | 3.1 | 78.4 | 4.7 | .952 | 10.21 | .65 | .86 |
| 9 | 80.7 | 3.0 | 79.2 | 4.5 | .976 | .45 | .62 | .87 |
| 10 | 80.5 | 3.6 | 78.7 | 5.4 | .961 | .31 | .90 | .84 |
| 11 | 79.8 | 2.2 | 78.7 | 3.3 | .961 | .35 | .12 | .90 |
| 12 | <i>Sunday.</i> | | | | | | | |
| 13 | 81.7 | 3.0 | 80.2 | 4.5 | 1.008 | .77 | .65 | .87 |
| 14 | 81.1 | 2.8 | 79.7 | 4.2 | 0.992 | .63 | .50 | .88 |
| 15 | 80.9 | 3.4 | 79.2 | 5.1 | .976 | .45 | .83 | .85 |
| 16 | 80.6 | 2.3 | 79.4 | 3.5 | .983 | .54 | .25 | .89 |
| 17 | 80.1 | 2.4 | 78.9 | 3.6 | .967 | .39 | .25 | .89 |
| 18 | 80.1 | 2.1 | 79.0 | 3.2 | .970 | .44 | .10 | .91 |
| 19 | <i>Sunday</i> | | | | | | | |
| 20 | 80.2 | 2.1 | 79.1 | 3.2 | .973 | .47 | .11 | .90 |
| 21 | 79.3 | 2.4 | 78.1 | 3.6 | .943 | .14 | .23 | .89 |
| 22 | 77.3 | 3.3 | 75.6 | 5.0 | .871 | 9.39 | .62 | .85 |
| 23 | 77.2 | 2.3 | 76.0 | 3.5 | .882 | .52 | .14 | .89 |
| 24 | 78.2 | 3.1 | 76.6 | 4.7 | .899 | .67 | .57 | .86 |
| 25 | 79.7 | 3.2 | 78.1 | 4.8 | .943 | 10.12 | .67 | .86 |
| 26 | <i>Sunday.</i> | | | | | | | |
| 27 | 78.8 | 2.9 | 77.3 | 4.4 | .919 | 9.90 | .47 | .87 |
| 28 | 78.8 | 3.3 | 77.1 | 5.0 | .913 | .82 | .69 | .85 |
| 29 | 78.7 | 3.1 | 77.1 | 4.7 | .913 | .82 | .58 | .86 |
| 30 | 78.9 | 3.1 | 77.3 | 4.7 | .919 | .88 | .59 | .86 |
| 31 | 78.8 | 2.7 | 77.4 | 4.1 | .922 | .93 | .38 | .88 |

All the Hygrometrical elements are computed by the Greenwich constants.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of July, 1857.*

Hourly Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

| Hour. | Mean Height of the Barometer at 32° Fahr. | Range of the Barometer for each hour during the month. | | | Mean Dry Bulb Thermometer. | Range of the Tempera- ture for each hour during the month. | | |
|----------------|---|--|---------|---------|-------------------------------|---|------|-------|
| | | Max. | Min. | Diff. | | Max. | Min. | Diff. |
| | Inches. | Inches. | Inches. | Inches. | o | o | o | o |
| Mid- night. | 29.561 | 29.744 | 29.372 | 0.372 | 80.6 | 83.2 | 77.4 | 5.8 |
| 1 | .547 | .729 | .359 | .370 | 80.4 | 82.7 | 77.5 | 5.2 |
| 2 | .535 | .713 | .348 | .365 | 80.3 | 82.9 | 77.7 | 5.2 |
| 3 | .525 | .708 | .336 | .372 | 80.1 | 82.2 | 78.1 | 4.1 |
| 4 | .528 | .704 | .328 | .376 | 80.0 | 82.0 | 78.4 | 3.6 |
| 5 | .534 | .703 | .380 | .323 | 79.9 | 81.6 | 78.4 | 3.2 |
| 6 | .549 | .715 | .353 | .362 | 79.8 | 81.8 | 77.8 | 4.0 |
| 7 | .565 | .729 | .388 | .341 | 80.3 | 82.2 | 77.8 | 4.4 |
| 8 | .578 | .751 | .410 | .341 | 81.4 | 84.2 | 77.8 | 6.4 |
| 9 | .586 | .756 | .417 | .339 | 82.5 | 85.4 | 78.4 | 7.0 |
| 10 | .588 | .754 | .421 | .333 | 83.6 | 86.8 | 79.0 | 7.8 |
| 11 | .580 | .736 | .422 | .314 | 84.4 | 88.4 | 79.2 | 9.2 |
| Noon. | .567 | .725 | .408 | .317 | 84.3 | 90.0 | 79.6 | 10.4 |
| 1 | .550 | .705 | .384 | .321 | 84.9 | 90.0 | 80.0 | 10.0 |
| 2 | .527 | .691 | .370 | .321 | 85.0 | 89.4 | 80.0 | 9.4 |
| 3 | .510 | .682 | .349 | .333 | 84.7 | 89.4 | 80.6 | 8.8 |
| 4 | .498 | .665 | .335 | .330 | 84.4 | 88.8 | 80.2 | 8.6 |
| 5 | .496 | .654 | .341 | .313 | 83.7 | 87.0 | 79.8 | 7.2 |
| 6 | .506 | .655 | .356 | .299 | 83.2 | 87.0 | 79.2 | 7.8 |
| 7 | .527 | .664 | .373 | .291 | 82.6 | 86.6 | 78.5 | 8.1 |
| 8 | .546 | .694 | .401 | .293 | 81.9 | 84.4 | 78.3 | 6.1 |
| 9 | .566 | .725 | .419 | .306 | 81.7 | 84.0 | 77.6 | 6.4 |
| 10 | .582 | .748 | .426 | .322 | 81.5 | 83.6 | 77.2 | 6.4 |
| 11 | .581 | .741 | .422 | .319 | 81.1 | 83.4 | 77.2 | 6.2 |

The Mean height of the Barometer, as likewise the Mean Dry and Wet Bulb Thermometers are derived from the observations made at the several hours during the month.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of July, 1857.*

Hourly Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

| Hour. | Mean Wet Bulb Ther- mometer. | Dry Bulb above Wet. | Computed Dew Point. | Dry Bulb above Dew Point. | Mean Elastic Force of Vapour. | Mean Weight of Va- pour in a cubic foot of Air. | Additional Weight of Vapour required for complete satu- ration. | Mean degree of Hu- midity, complete saturation being unity. |
|----------------|---------------------------------|---------------------|---------------------|------------------------------|----------------------------------|---|--|--|
| | o | o | o | o | Inches. | T. gr. | T. gr. | |
| Mid- night. | 78.6 | 2.0 | 77.6 | 3.0 | 0.928 | 10.01 | 1.00 | 0.91 |
| 1 | 78.6 | 1.8 | 77.7 | 2.7 | .931 | .04 | 0.90 | .92 |
| 2 | 78.5 | 1.8 | 77.6 | 2.7 | .928 | .01 | .90 | .92 |
| 3 | 78.4 | 1.7 | 77.5 | 2.6 | .925 | 9.98 | .86 | .92 |
| 4 | 78.3 | 1.7 | 77.4 | 2.6 | .922 | .95 | .86 | .92 |
| 5 | 78.1 | 1.8 | 77.2 | 2.7 | .916 | .89 | .89 | .92 |
| 6 | 78.1 | 1.7 | 77.2 | 2.6 | .916 | .89 | .86 | .92 |
| 7 | 78.4 | 1.9 | 77.4 | 2.9 | .922 | .95 | .96 | .91 |
| 8 | 79.0 | 2.4 | 77.8 | 3.6 | .934 | 10.05 | 1.22 | .89 |
| 9 | 79.6 | 2.9 | 78.1 | 4.4 | .943 | .14 | .50 | .87 |
| 10 | 80.1 | 3.5 | 78.3 | 5.3 | .949 | .18 | .85 | .85 |
| 11 | 80.6 | 3.8 | 78.7 | 5.7 | .961 | .29 | 2.02 | .84 |
| Noon. | 80.7 | 3.6 | 78.9 | 5.4 | .967 | .37 | 1.91 | .84 |
| 1 | 80.9 | 4.0 | 78.9 | 6.0 | .967 | .34 | 2.15 | .83 |
| 2 | 80.9 | 4.1 | 78.8 | 6.2 | .964 | .31 | .22 | .82 |
| 3 | 80.9 | 3.8 | 79.0 | 5.7 | .970 | .37 | .05 | .84 |
| 4 | 80.8 | 3.6 | 79.0 | 5.4 | .970 | .40 | 1.91 | .85 |
| 5 | 80.4 | 3.3 | 78.7 | 5.0 | .961 | .31 | .76 | .85 |
| 6 | 80.2 | 3.0 | 78.7 | 4.5 | .961 | .31 | .58 | .87 |
| 7 | 79.8 | 2.8 | 78.4 | 4.2 | .952 | .23 | .45 | .88 |
| 8 | 79.4 | 2.5 | 78.1 | 3.8 | .943 | .14 | .30 | .89 |
| 9 | 79.4 | 2.3 | 78.2 | 3.5 | .946 | .17 | .20 | .89 |
| 10 | 79.2 | 2.3 | 78.0 | 3.5 | .940 | .11 | .20 | .89 |
| 11 | 79.0 | 2.1 | 77.9 | 3.2 | .937 | .10 | .07 | .90 |

All the Hygrometrical elements are computed by the Greenwich constants.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of July, 1857.*

Solar Radiation, Weather, &c.

| Date. | Max. Solar radiation. | Rain Gauge 5 feet above Ground. | Prevailing direction of the Wind. | General Aspect of the Sky. |
|-------|-----------------------|---------------------------------|-----------------------------------|--|
| | o | Inches. | | |
| 1 | .. | .. | S. W. | Cloudy : also drizzling occasionally. |
| 2 | .. | 0.37 | S. W. & S. | Cloudy ; also raining between 8 & 10 A. M. |
| 3 | .. | 1.22 | S. W. & S. | Cloudy and constantly raining between 3 and 10 A. M. also between 8 and 11 P. M. |
| 4 | .. | 2.20 | S. W. & S. | Cloudy, also occasionally heavy shower. |
| 5 | Sunday. | 0.79 | | |
| 6 | .. | 0.23 | S. | Cloudy, with occasional drizzling. |
| 7 | .. | 0.30 | S. | Cloudy with little rain. |
| 8 | .. | .. | S. | Cloudy. |
| 9 | .. | .. | S. | Cloudy. |
| 10 | .. | .. | S. & S. W. | Cloudy. Also slightly drizzling between 5 and 9 P. M. [8 A. M. and 1 P. M. |
| 11 | .. | .. | S. W. & S. | Cloudy. Also slightly drizzling between |
| 12 | Sunday. | .. | | |
| 13 | .. | 0.28 | S. & S. W. | Cloudy. Also rain at 3 P. M. |
| 14 | .. | 0.92 | S. & S. W. & N. W. | Cloudy and raining occasionally. |
| 15 | .. | .. | S. W. | Cloudless till 7 A. M. cloudy afterwards. |
| 16 | .. | 0.15 | S. W. & calm & S. | Cloudy and raining between 1 & 2 P. M. |
| 17 | .. | 0.79 | S. W. & S. | Cloudless till 2 A. M. cloudy till 3 P. M. Scatd. Ni & ~i till 8 P. M. cloudless afterwards. Also raining between 6 & 9 A. M. [P. M. |
| 18 | .. | 0.70 | S. | Cloudy, & constantly raining before 3 |
| 19 | Sunday. | .. | | |
| 20 | .. | 0.66 | S. & S. W. | Cloudless till 5 A. M. cloudy afterwards : also constantly raining after 8 A. M. |
| 21 | .. | 0.40 | S. | Cloudy. Also incessantly raining between Midnight & 2 P. M. [4 & 10 P. M. |
| 22 | .. | 1.11 | S. | Cloudy. Also incessantly raining between |
| 23 | .. | 0.08 | S. & S. W. | Cloudy. Also occasionally raining. |
| 24 | .. | 0.26 | S. & N. E. | Cloudy. Also raining at 5 P. M. [5 P. M. |
| 25 | .. | .. | S. & S. W. | Cloudy. Also very slightly drizzling at |
| 26 | Sunday. | 1.53 | | |
| 27 | .. | 0.56 | E. & S. E. & S. | Cloudy. Also raining between 2 & 3 P. M. |
| 28 | .. | 0.16 | E. & S. E. | Cloudy. Also raining between 4 & 5 P. M. |
| 29 | .. | .. | E. & S. E. | Cloudless till 4 A. M. Scatd. clouds till 7 P. M. cloudless afterwards. |
| 30 | .. | 0.27 | S. E. & E. | Cloudless till 4 A. M. Scatd. clouds afterwards : also slightly raining from Noon to 4 P. M. |
| 31 | .. | .. | E. & S. E. | Cloudless till 5 P. M. cloudy afterwards : also very slightly drizzling at 2 P. M. |

~i Cirri, ~i Cirro strati, ~i Cumuli, ~i Cumulo strati, ~i Nimbi, —i Strati
~i Cirro cumuli.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of July, 1857.*

MONTHLY RESULTS.

| | | | Inches. |
|---|----|----|---------|
| Mean height of the Barometer for the month, | .. | .. | 29.547 |
| Max. height of the Barometer occurred at 9 A. M. on the 28th, | .. | .. | 29.756 |
| Min. height of the Barometer occurred at 4 A. M. on the 6th, | .. | .. | 29.328 |
| Extreme range of the Barometer during the month, | .. | .. | 0.428 |

| | | | ° |
|--|----|----|------|
| Mean Dry Bulb Thermometer for the month, | .. | .. | 82.2 |
| Max. Temperature occurred at Noon & 1 P. M. on the 10th & 13th, .. | .. | .. | 90.0 |
| Min. Temperature occurred at 10 & 11 P. M. on the 22nd, | .. | .. | 77.2 |
| Extreme range of the Temperature during the month, | .. | .. | 12.8 |

| | | | ° |
|---|----|----|---------|
| Mean Wet Bulb Thermometer for the month, | .. | .. | 79.5 |
| Mean Dry Bulb Thermometer above Mean Wet Bulb Thermometer, .. | .. | .. | 2.7 |
| Computed Mean Dew-point for the month, .. | .. | .. | 78.1 |
| Mean Dry Bulb Thermometer above computed mean Dew-point, | .. | .. | 4.1 |
| | | | Inches. |
| Mean Elastic force of Vapour for the month, | .. | .. | 0.943 |

| | | | Troy grains. |
|---|----|----|--------------|
| Mean Weight of Vapour for the month, | .. | .. | 10.14 |
| Additional Weight of Vapour required for complete saturation, | .. | .. | 1.40 |
| Mean degree of humidity for the month, complete saturation being unity, | .. | .. | 0.88 |

| | | | Inches. |
|--|----|----|---------|
| Rained 27 days, Max. fall of rain during 24 hours, | .. | .. | 2.20 |
| Total amount of rain during the month, | .. | .. | 12.98 |
| Prevailing direction of the Wind, | .. | .. | S. |

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of July, 1857.*

MONTHLY RESULTS.

Table showing the number of days on which at a given hour any particular wind
blew, together with the number of days on which at the same hour when
any particular wind was blowing it rained.

| Hour. | N. | Rain on. | N. E. | Rain on. | E. | Rain on. | S. E. | Rain on. | S. | Rain on. | S. W. | Rain on. | W. | Rain on. | N. W. | Rain on. | Calm. | Rain on. |
|-----------|----|----------|-------|----------|----|----------|-------|----------|----|----------|-------|----------|----|----------|-------|----------|-------|----------|
| | | | | | | | | | | | | | | | | | | |
| Midnight. | | | | | | | | | | | | | | | | | | |
| 1 | | | | | 1 | | 3 | | 16 | 2 | 5 | | | | | | 2 | |
| 2 | | | | | 1 | | 3 | | 14 | 2 | 5 | | | | | | 4 | |
| 3 | | | | | 2 | | 2 | | 16 | 3 | 4 | | | | | | 3 | |
| 4 | | | | | 3 | | 1 | | 15 | 3 | 4 | 1 | | | | | 3 | |
| 5 | | 1 | | | 3 | | | | 15 | 3 | 4 | 1 | | | | | 3 | |
| 6 | | 2 | | | 3 | | | | 12 | 1 | 6 | 2 | 1 | 1 | | | 1 | |
| 7 | | 3 | | | 3 | | | | 12 | 3 | 6 | 2 | | | | 2 | 1 | |
| 8 | | 2 | | | 5 | 1 | | | 12 | 1 | 7 | 1 | | | | 1 | | |
| 9 | 1 | | | | 6 | 1 | | | 9 | 1 | 11 | 4 | | | | 1 | | |
| 10 | | | | | 3 | | 2 | | 9 | 1 | 9 | 4 | 2 | | | 1 | | |
| 11 | | 1 | | | 3 | | 2 | | 11 | 2 | 9 | 2 | 1 | | | 1 | | |
| | | | | | 2 | | 2 | | 8 | 3 | 13 | 2 | 1 | 1 | | | | |
| Noon. | | | | | | | | | | | | | | | | | | |
| 1 | | | 2 | | 1 | | 3 | 1 | 6 | 3 | 14 | 4 | 1 | | | | | |
| 2 | | | 1 | | 2 | | 2 | 2 | 9 | 4 | 11 | 3 | 2 | | | | | |
| 3 | | | 1 | 1 | 3 | | 4 | 2 | 9 | 4 | 8 | 2 | 2 | | | | | |
| 4 | | | 1 | | 3 | | 3 | | 11 | 2 | 7 | 1 | 1 | | | | | |
| 5 | | | | | 2 | | 1 | 1 | 9 | 1 | 13 | 9 | 2 | | | 1 | | |
| 6 | | | | | 1 | | 2 | | 13 | 3 | 9 | 2 | | | | 2 | 1 | |
| 7 | | 1 | | | 2 | 1 | 2 | | 15 | 3 | 6 | | 1 | | | | | |
| 8 | | 1 | | | 1 | | 3 | | 16 | 3 | 5 | | 1 | 1 | | | | |
| 9 | | 1 | | | 1 | | 3 | | 15 | 2 | 5 | 1 | 1 | | | | 1 | |
| 10 | | 1 | | | 2 | | 2 | | 17 | 3 | 5 | 1 | | | | | | |
| 11 | | 1 | | | 3 | | 2 | | 16 | 2 | 5 | | | | | | | |
| | | | | | 2 | | 3 | | 16 | 1 | 5 | | | | | | | |

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of July, 1857.*

On the 21st July, 1857, the Meteorological Observations after ten minutes intervals being taken at the Surveyor General's Office, they indicate the following circumstances.

Exact Time of Minimum Barometer, .. $\left\{ \begin{array}{ll} \text{A. M.} & \begin{array}{cc} \text{h. m.} & \text{h. m.} \\ 3 & 20 \text{ \& } 4 & 0 \end{array} \\ \text{P. M.} & 4 \text{ } 50 \end{array} \right.$

Ditto Maximum Barometer, .. $\left\{ \begin{array}{l} \text{A. M. 10} \quad 40 \\ \text{P. M. 10} \quad 30 \end{array} \right.$

Ditto Minimum Temperature, {
h. m.
h. m.
A. M. Between 7 0 & 8 0 during
the whole of which interval the ther-
mometer stood at the same reading
o
79.6 which was the lowest tempera-
ture during the day.

| | | | |
|-------|----------------------|-------|-------|
| | | | h. m. |
| Ditto | Maximum Temperature, | P. M. | 4 10 |

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of August, 1857.*

Latitude 22° 33' 1" North. Longitude 88° 20' 34" East.

Feet.

Height of the Cistern of the Standard Barometer above the Sea level, 18.11.

Daily Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

| Date. | Mean Height of the Barometer at 32° Fahr. | Range of the Barometer during the day. | | | Mean Dry Bulb Thermometer. | Range of the Tempera- ture during the day. | | |
|-------|---|---|---------|---------|-------------------------------|---|------|-------|
| | | Max. | Min. | Diff. | | Max. | Min. | Diff. |
| | Inches. | Inches. | Inches. | Inches. | ° | ° | ° | ° |
| 1 | 29.632 | 29.665 | 29.574 | 0.091 | 80.3 | 84.0 | 78.4 | 5.6 |
| 2 | <i>Sunday.</i> | | | | | | | |
| 3 | .650 | .701 | .579 | .122 | 81.0 | 85.0 | 77.6 | 7.4 |
| 4 | .578 | .671 | .493 | .178 | 81.0 | 83.6 | 79.4 | 4.2 |
| 5 | .508 | .557 | .446 | .111 | 80.3 | 81.8 | 79.0 | 2.8 |
| 6 | .462 | .506 | .422 | .084 | 79.5 | 81.4 | 76.6 | 4.8 |
| 7 | .454 | .492 | .392 | .100 | 81.0 | 84.0 | 78.7 | 5.3 |
| 8 | .447 | .487 | .389 | .098 | 81.8 | 85.0 | 79.1 | 5.9 |
| 9 | <i>Sunday.</i> | | | | | | | |
| 10 | .469 | .536 | .424 | .112 | 80.9 | 83.4 | 78.8 | 4.6 |
| 11 | .505 | .553 | .457 | .096 | 81.5 | 87.0 | 79.4 | 7.6 |
| 12 | .514 | .558 | .447 | .111 | 81.0 | 84.2 | 79.1 | 4.8 |
| 13 | .483 | .535 | .407 | .128 | 81.1 | 86.0 | 77.7 | 8.3 |
| 14 | .462 | .512 | .386 | .126 | 81.8 | 86.8 | 78.8 | 8.0 |
| 15 | .473 | .516 | .403 | .113 | 82.4 | 87.4 | 78.8 | 8.6 |
| 16 | <i>Sunday.</i> | | | | | | | |
| 17 | .438 | .506 | .359 | .147 | 82.2 | 88.8 | 79.8 | 9.0 |
| 18 | .406 | .456 | .335 | .121 | 82.8 | 87.7 | 80.2 | 7.5 |
| 19 | .352 | .463 | .239 | .224 | 81.9 | 85.4 | 79.6 | 5.8 |
| 20 | .493 | .568 | .418 | .150 | 82.7 | 87.7 | 78.6 | 9.1 |
| 21 | .531 | .576 | .463 | .113 | 84.1 | 89.0 | 80.9 | 8.1 |
| 22 | .534 | .576 | .482 | .094 | 83.5 | 85.3 | 81.8 | 3.5 |
| 23 | <i>Sunday.</i> | | | | | | | |
| 24 | .584 | .629 | .533 | .096 | 81.4 | 86.2 | 77.4 | 8.8 |
| 25 | .587 | .638 | .511 | .127 | 83.7 | 89.4 | 80.6 | 8.8 |
| 26 | .561 | .604 | .492 | .112 | 84.2 | 89.0 | 80.6 | 8.4 |
| 27 | .571 | .635 | .513 | .122 | 83.6 | 89.4 | 80.6 | 8.8 |
| 28 | .596 | .650 | .530 | .120 | 82.8 | 86.4 | 80.2 | 6.2 |
| 29 | .577 | .619 | .518 | .101 | 82.7 | 87.4 | 80.3 | 7.1 |
| 30 | <i>Sunday.</i> | | | | | | | |
| 31 | .561 | .732 | .587 | .145 | 82.3 | 86.0 | 79.6 | 6.4 |

The Mean height of the Barometer, as likewise the Mean Dry and Wet Bulb Thermometers are derived, from the twenty-four hourly observations made, during the day.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of August, 1857.*

Daily Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon. (Continued.)

| Date. | Mean Wet Bulb Ther- mometer. | Dry Bulb above Wet. | Computed Dew Point. | Dry Bulb above Dew Point. | Mean Elastic force of Vapour. | Mean Weight of Vapour in a cubic foot of air. | Additional Weight of Va- pour required for com- plete saturation. | Mean degree of Humi- dity, complete satura- tion being unity. |
|-------|---------------------------------|---------------------|---------------------|------------------------------|----------------------------------|--|---|---|
| 1 | 78.2 | 2.1 | 77.1 | 3.2 | 0.913 | 9.86 | 1.05 | 0.90 |
| 2 | <i>Sunday.</i> | | | | | | | |
| 3 | 78.6 | 2.4 | 77.4 | 3.6 | .922 | .93 | .21 | .89 |
| 4 | 79.2 | 1.8 | 78.3 | 2.7 | .949 | 10.22 | 0.92 | .92 |
| 5 | 78.5 | 1.8 | 77.6 | 2.7 | .928 | .01 | .90 | .92 |
| 6 | 77.5 | 2.0 | 76.5 | 3.0 | .896 | 9.69 | .97 | .91 |
| 7 | 78.4 | 2.6 | 77.1 | 3.9 | .913 | .84 | 1.30 | .88 |
| 8 | 79.2 | 2.6 | 77.9 | 3.9 | .937 | 10.08 | .32 | .88 |
| 9 | <i>Sunday.</i> | | | | | | | |
| 10 | 78.9 | 2.0 | 77.9 | 3.0 | .937 | .10 | .00 | .91 |
| 11 | 79.1 | 2.4 | 77.9 | 3.6 | .937 | .08 | .23 | .89 |
| 12 | 79.0 | 2.0 | 78.0 | 3.0 | .910 | .13 | .01 | .91 |
| 13 | 78.5 | 2.6 | 77.2 | 3.9 | .916 | 9.87 | .30 | .88 |
| 14 | 78.4 | 3.4 | 76.7 | 5.1 | .902 | .70 | .70 | .85 |
| 15 | 79.0 | 3.4 | 77.3 | 5.1 | .919 | .88 | .73 | .85 |
| 16 | <i>Sunday.</i> | | | | | | | |
| 17 | 79.6 | 2.6 | 78.3 | 3.9 | .949 | 10.20 | .34 | .88 |
| 18 | 80.0 | 2.8 | 78.6 | 4.2 | .958 | .30 | .45 | .88 |
| 19 | 79.0 | 2.9 | 77.5 | 4.4 | .925 | 9.96 | .48 | .87 |
| 20 | 79.8 | 2.9 | 78.3 | 4.4 | .949 | 10.20 | .52 | .87 |
| 21 | 80.5 | 3.6 | 78.7 | 5.4 | .961 | .31 | .90 | .84 |
| 22 | 80.6 | 2.9 | 79.1 | 4.4 | .973 | .45 | .55 | .87 |
| 23 | <i>Sunday.</i> | | | | | | | |
| 24 | 78.3 | 3.1 | 76.7 | 4.7 | .902 | 9.70 | .57 | .86 |
| 25 | 79.8 | 3.9 | 77.8 | 5.9 | .934 | 10.01 | 2.06 | .83 |
| 26 | 80.1 | 4.1 | 78.0 | 6.2 | .940 | .07 | .17 | .82 |
| 27 | 80.0 | 3.6 | 78.2 | 5.4 | .946 | .15 | 1.88 | .84 |
| 28 | 79.3 | 3.5 | 77.5 | 5.3 | .925 | 9.94 | .81 | .85 |
| 29 | 79.6 | 3.1 | 78.0 | 4.7 | .940 | 10.09 | .63 | .86 |
| 30 | <i>Sunday.</i> | | | | | | | |
| 31 | 79.8 | 2.5 | 78.5 | 3.8 | .955 | .27 | .31 | .89 |

All the Hygrometrical elements are computed by the Greenwich Constants.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta
in the month of August, 1857.*

Hourly Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

| Hour. | Mean Height of the Barometer at 32° Faht. | Range of the Barometer for each hour during the month. | | | Mean Dry Bulb Thermometer. | Range of the Temperature for each hour during the month | | |
|------------|---|--|---------|---------|-------------------------------|---|------|-------|
| | | Max. | Min. | Diff. | | Max. | Min. | Diff. |
| | Inches. | Inches. | Inches. | Inches. | o | o | o | o |
| Mid-night. | 29.545 | 29.671 | 29.398 | 0.273 | 80.5 | 82.9 | 77.6 | 5.3 |
| 1 | .531 | .664 | .391 | .273 | 80.3 | 82.7 | 77.4 | 5.3 |
| 2 | .514 | .660 | .354 | .306 | 80.1 | 82.6 | 77.6 | 5.0 |
| 3 | .508 | .650 | .351 | .299 | 80.0 | 82.4 | 77.5 | 4.9 |
| 4 | .502 | .629 | .342 | .287 | 79.7 | 82.2 | 77.6 | 4.6 |
| 5 | .507 | .633 | .342 | .291 | 79.6 | 82.2 | 77.6 | 4.6 |
| 6 | .524 | .668 | .352 | .316 | 79.6 | 81.8 | 77.8 | 4.0 |
| 7 | .539 | .695 | .357 | .338 | 80.0 | 82.6 | 76.6 | 6.0 |
| 8 | .552 | .696 | .369 | .327 | 81.0 | 83.8 | 77.8 | 6.0 |
| 9 | .558 | .698 | .376 | .322 | 82.5 | 85.4 | 78.8 | 6.6 |
| 10 | .560 | .705 | .375 | .330 | 83.6 | 85.8 | 79.4 | 6.4 |
| 11 | .550 | .691 | .364 | .327 | 84.2 | 87.5 | 79.8 | 7.7 |
| Noon. | .534 | .683 | .333 | .350 | 84.6 | 87.8 | 79.9 | 7.9 |
| 1 | .514 | .660 | .301 | .359 | 84.8 | 88.8 | 79.4 | 9.4 |
| 2 | .491 | .638 | .261 | .377 | 84.6 | 89.4 | 80.8 | 8.6 |
| 3 | .472 | .622 | .239 | .383 | 84.6 | 89.2 | 80.6 | 8.6 |
| 4 | .461 | .619 | .251 | .368 | 84.5 | 89.4 | 80.6 | 8.8 |
| 5 | .462 | .634 | .271 | .363 | 83.5 | 87.4 | 79.9 | 7.5 |
| 6 | .474 | .649 | .314 | .335 | 82.6 | 86.8 | 79.4 | 7.4 |
| 7 | .494 | .673 | .346 | .327 | 81.9 | 84.0 | 79.5 | 4.5 |
| 8 | .521 | .698 | .383 | .310 | 81.6 | 83.8 | 79.6 | 4.2 |
| 9 | .544 | .717 | .403 | .314 | 81.3 | 83.8 | 79.7 | 4.1 |
| 10 | .560 | .732 | .429 | .303 | 81.0 | 83.2 | 79.4 | 3.8 |
| 11 | .556 | .732 | .428 | .304 | 80.9 | 83.2 | 79.4 | 3.8 |

The Mean Height of the Barometer, as likewise the Mean Dry and Wet Bulb Thermometers are derived from the observations made at the several hours during the month.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of August, 1857.*

Hourly Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.—(Continued.)

| Hour. | Mean Wet Bulb Thermometer. | Dry Bulb above Wet. | Computed Dew point. | Dry Bulb above Dew point. | Mean elastic force of Vapour. | Mean Weight of Va- pour in a Cubic foot of Air. | Additional weight of vapour required for complete saturation. | Mean degree of hu- midity, complete satu- ration being unity. |
|----------------|-------------------------------|---------------------|---------------------|------------------------------|----------------------------------|---|---|---|
| | o | o | o | o | Inches. | Troy grs. | Troy grs. | |
| Mid- night. | 78.7 | 1.8 | 77.8 | 2.7 | .934 | 10.07 | 0.91 | 0.92 |
| 1 | 78.6 | 1.7 | 77.7 | 2.6 | .931 | .04 | .87 | .92 |
| 2 | 78.4 | 1.7 | 77.5 | 2.6 | .925 | 9.98 | .86 | .92 |
| 3 | 78.4 | 1.6 | 77.6 | 2.4 | .928 | 10.03 | .78 | .93 |
| 4 | 78.1 | 1.6 | 77.3 | 2.4 | .919 | 9.94 | .78 | .93 |
| 5 | 78.0 | 1.6 | 77.2 | 2.4 | .916 | .91 | .78 | .93 |
| 6 | 77.9 | 1.7 | 77.0 | 2.6 | .910 | .83 | .86 | .92 |
| 7 | 78.2 | 1.8 | 77.3 | 2.7 | .919 | .92 | .89 | .92 |
| 8 | 78.7 | 2.3 | 77.5 | 3.5 | .925 | .96 | 1.18 | .89 |
| 9 | 79.5 | 3.0 | 78.0 | 4.5 | .940 | 10.09 | .55 | .87 |
| 10 | 79.7 | 3.9 | 77.7 | 5.9 | .931 | 9.98 | 2.05 | .83 |
| 11 | 80.1 | 4.1 | 78.0 | 6.2 | .940 | 10.07 | .17 | .82 |
| | | | | | | | | |
| Noon. | 80.3 | 4.3 | 78.1 | 6.5 | .943 | .08 | .31 | .81 |
| 1 | 80.3 | 4.5 | 78.0 | 6.8 | .940 | .05 | .41 | .81 |
| 2 | 80.4 | 4.2 | 78.3 | 6.3 | .949 | .16 | .23 | .82 |
| 3 | 80.2 | 4.4 | 78.0 | 6.6 | .940 | .05 | .34 | .81 |
| 4 | 80.2 | 4.3 | 78.0 | 6.5 | .940 | .05 | .30 | .81 |
| 5 | 79.9 | 3.6 | 78.1 | 5.4 | .943 | .12 | 1.88 | .84 |
| 6 | 79.5 | 3.1 | 77.9 | 4.7 | .937 | .06 | .62 | .86 |
| 7 | 79.2 | 2.7 | 77.8 | 4.1 | .934 | .05 | .39 | .88 |
| 8 | 79.2 | 2.4 | 78.0 | 3.6 | .940 | .11 | .23 | .89 |
| 9 | 79.1 | 2.2 | 78.0 | 3.3 | .940 | .13 | .11 | .90 |
| 10 | 79.0 | 2.0 | 78.0 | 3.0 | .940 | .13 | .01 | .91 |
| 11 | 79.0 | 1.9 | 78.0 | 2.9 | .940 | .13 | 0.97 | .91 |

All the Hygrometrical elements are computed by the Greenwich constants.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of August, 1857.*

Solar radiation, Weather, &c.

| Date. | Max. Solar radiation. | Rain Gauge 5 feet above Ground. | Prevailing direction of the Wind. | General Aspect of the Sky. |
|-------|-----------------------|---------------------------------|-----------------------------------|--|
| 1 | o .. | Inches. 2.11 | E. | [& 1 P. M. Cloudy also raining between 10 A. M. |
| 2 | <i>Sunday.</i> | | | |
| 3 | .. | 0.60 | S. & S. E. & E. | Cloudy, also raining between 4 & 8 A. M. |
| 4 | .. | 2.10 | S. W. & S. & S. E. | Cloudy, also raining between 8 A. M. & 3 P. M. [P. M. |
| 5 | .. | 0.20 | S. & S. W. | Cloudy, also raining between 1 and 6 |
| 6 | .. | 2.08 | S. | Cloudy with incessant rain. |
| 7 | .. | .. | S. | Cloudy and occasionally drizzling. |
| 8 | .. | 0.20 | S. | Cloudy and drizzling occasionally. |
| 9 | <i>Sunday.</i> | 0.18 | | |
| 10 | .. | 0.34 | S. E. & S. | Cloudy and drizzling occasionally. |
| 11 | .. | 0.28 | E. & S. E. | Cloudy and raining between 2 & 3 P. M. |
| 12 | .. | 0.52 | S. E. & S. W. & E. | Cloudy with occasional rain. [P. M. |
| 13 | .. | 0.50 | S. E. & S. | Cloudy & also raining between 1 and 2 |
| 14 | .. | .. | E. & N. E. & S. E. | Cloudy with slight drizzling now and then. |
| 15 | .. | 0.37 | E. | Cloudy and slightly raining after 12. |
| 16 | <i>Sunday.</i> | | | |
| 17 | .. | 0.45 | N. E. & E. & S. | [2 and 5 P. M. Cloudy and slightly drizzling between |
| 18 | .. | 0.36 | N. E. | Cloudless till 2 A. M. cloudy afterwards; with occasional drizzling. |
| 19 | .. | 0.17 | N. & S. E. & N. E. | Cloudy with occasional drizzling. |
| 20 | .. | 1.63 | S. E. & N. E. | Cloudy also raining constantly. |
| 21 | .. | .. | S. | Cloudy. |
| 22 | .. | .. | S. W. & S. | Scatd. ~i till 9 A. M. cloudy afterwards, also very slightly drizzling between 4 & 5 P. M. |
| 23 | <i>Sunday.</i> | 3.74 | | |
| 24 | .. | 0.58 | S. W. & S. | Cloudy also constantly raining before sun rise. [6 P. M. |
| 25 | 124.0 | .. | S. | Cloudy also very slightly drizzling at |
| 26 | 124.0 | 0.17 | S. | Scatd. clouds also raining between 9 & 10 P. M. [5 P. M. and midnight. |
| 27 | 131.0 | 0.64 | S. & S. W. | Cloudy also incessantly raining between |
| 28 | .. | .. | S. W. | Cloudy also occasionally drizzling before sun rise. |
| 29 | .. | 1.25 | S. W. & S. & S. E. | Cloudy also raining between 4 & 7 P. M. |
| 30 | <i>Sunday.</i> | | | |
| 31 | .. | 0.23 | S. E. & E. | Cloudy also raining between 3 & 4 P. M. |

~i Cirri, ~i cirro strati, ~i cumuli, ~i cumulo strati, ~i nimbi, ~i strati,
~i cirro cumuli.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of August, 1857.*

MONTHLY RESULTS.

| | | | Inches. |
|--|----|----|---------|
| Mean height of the Barometer for the month, | .. | .. | 29.520 |
| Max. height of the Barometer, occurred at 10 & 11 P. M. on the 31st, | .. | .. | 29.732 |
| Min. height of the Barometer, occurred at 3 P. M. on the 19th, | .. | .. | 29.239 |
| Extreme Range of the Barometer during the month, | .. | .. | 0.493 |

| | | | ° |
|---|----|----|------|
| Mean Dry Bulb Thermometer for the month, | .. | .. | 82.0 |
| Max. Temperature, occurred at 2 P. M. on the 25th, and 4 P. M. on the 27th, | .. | .. | 89.4 |
| Min. Temperature, occurred at 7 A. M. on the 6th, | .. | .. | 76.6 |
| Extreme Range of the Temperature during the month, | .. | .. | 12.8 |

| | | | ° |
|--|----|----|---------|
| Mean Wet Bulb Thermometer for the month, | .. | .. | 79.2 |
| Mean Dry Bulb Thermometer above Mean Wet Bulb Thermometer, | .. | .. | 2.8 |
| Computed Mean Dew Point for the month, | .. | .. | 77.8 |
| Mean Dry Bulb Thermometer above computed Mean Dew Point, | .. | .. | 4.2 |
| | | | Inches. |
| Mean Elastic force of vapour for the month, | .. | .. | 0.934 |

| | | | Troy grains. |
|---|----|----|--------------|
| Mean weight of vapour for the month, | .. | .. | 10.05 |
| Additional weight of vapour required for complete saturation, | .. | .. | 1.42 |
| Mean degree of Humidity for the month, complete saturation being unity, | .. | .. | 0.88 |

| | | | Inches. |
|--|----|----|---------|
| Rained 28 days. Max. fall of rain during 24 hours, | .. | .. | 3.74 |
| Total amount of rain during the month, | .. | .. | 18.70 |
| Prevailing direction of the Wind, | .. | .. | S. |

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of August, 1857.*

MONTHLY RESULTS.

Table showing the number of days on which at a given hour any particular wind
blew, together with the number of days on which at the same hour,
when any particular wind was blowing it rained.

| Hour. | N. | Rain on. | N. E. | Rain on. | E. | Rain on. | S. E. | Rain on. | S. | Rain on. | S. W. | Rain on. | W. | Rain on. | N. W. | Rain on. | Calm. | Rain on. | Missed. |
|-----------|--------------|----------|-------|----------|----|----------|-------|----------|----|----------|-------|----------|----|----------|-------|----------|-------|----------|---------|
| | No. of days. | | | | | | | | | | | | | | | | | | |
| Midnight. | 1 | | | | 6 | 1 | 5 | 12 | 2 | | | | | | 1 | 1 | 1 | | |
| 1 | 1 | | | | 5 | | 6 | 2 | 11 | 1 | 1 | | | | 1 | 1 | 1 | | |
| 2 | 1 | | | | 5 | | 6 | 2 | 10 | 3 | 1 | 1 | | | 1 | 1 | 1 | | 1 |
| 3 | 1 | 1 | | | 4 | | 6 | 3 | 10 | 2 | 1 | 1 | | | 1 | 1 | 2 | | |
| 4 | 1 | 1 | 1 | | 3 | 1 | 5 | 1 | 10 | 3 | 2 | 2 | | | 1 | 1 | 1 | | 2 |
| 5 | 1 | 2 | | | 3 | | 5 | 1 | 8 | 2 | 4 | 1 | | | 1 | | | | 2 |
| 6 | 1 | 1 | 5 | 1 | 5 | 1 | 3 | | 8 | 1 | 4 | | | | | | | | |
| 7 | | 5 | 1 | | 7 | 1 | 2 | | 8 | 3 | 3 | | 1 | | | | | | |
| 8 | 1 | 3 | 1 | | 5 | 1 | 3 | 2 | 7 | 3 | 6 | | 1 | | | | | | |
| 9 | | 4 | | | 4 | | 4 | | 8 | | 4 | | | | 1 | | | | 1 |
| 10 | 1 | 3 | 1 | | 5 | 1 | 6 | 1 | 4 | | 7 | | | | 1 | | | | |
| 11 | | 3 | 1 | | 7 | 2 | 3 | 1 | 3 | | 8 | | 2 | | | | | | |
| Noon. | | | 4 | 2 | 6 | 3 | 4 | 2 | 4 | 1 | 6 | | | | 2 | | | | |
| 1 | | | 4 | | 4 | 2 | 4 | 3 | 8 | 1 | 5 | 1 | | | 1 | | | | |
| 2 | | | 4 | 1 | 3 | 1 | 5 | 1 | 6 | 3 | 8 | 3 | | | 1 | | | | |
| 3 | | | 2 | 1 | 5 | 2 | 2 | | 11 | 2 | 5 | 2 | 1 | | | | | | |
| 4 | | | 2 | 1 | 2 | 1 | 4 | | 10 | 2 | 7 | 1 | 1 | 1 | | | | | |
| 5 | | | 2 | 1 | 2 | 1 | 6 | 3 | 8 | 1 | 7 | 1 | 1 | 1 | | | | | |
| 6 | | | 2 | | 2 | | 6 | 1 | 11 | 2 | 5 | 1 | | | | | | | |
| 7 | | | 2 | | 3 | 1 | 4 | 2 | 12 | 4 | 5 | | | | | | | | |
| 8 | | | 1 | | 3 | | 6 | | 11 | 2 | 5 | | | | | | | | |
| 9 | | | 1 | | 4 | | 6 | | 10 | 2 | 4 | | | | | | 1 | | |
| 10 | | | 1 | | 4 | 1 | 6 | | 11 | 4 | 2 | | | | | | 1 | | 1 |
| 11 | | | 1 | | 4 | | 6 | | 12 | 1 | 2 | | | | | | 1 | | |

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of August, 1857.*

On the 20th August, 1857, the Meteorological Observations after ten minutes intervals being taken at the Surveyor General's Office, they indicate the following circumstances :—

Exact Time of Minimum Barometer,... $\left\{ \begin{array}{l} \text{h. m.} \quad \text{h. m.} \\ \text{A. M. Between 3-10 \& 3-20 during which} \\ \text{time the Barometer was stationary.} \\ \text{h. m.} \\ \text{P. M. 4-30.} \end{array} \right.$

Ditto Maximum Barometer,..... $\left\{ \begin{array}{l} \text{h. m.} \\ \text{A. M. 10-10.} \quad \text{h. m.} \quad \text{h. m.} \\ \text{P. M. Between 10-30. \& 10-50 during} \\ \text{which time the Barometer was sta-} \\ \text{tionary.} \end{array} \right.$

Ditto Minimum Temperature,..... A. M. 3-30 also 7-30.

Ditto Maximum Temperature,..... { P. M. Between ^{h. m.} 2-30 and ^{h. m.} 2-40 during which time the Thermometer was stationary.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of September, 1857.*

Latitude 22° 33' 1" North. Longitude 88° 20' 34" East.

feet.

Height of the Cistern of the Standard Barometer above the Sea level, 18.11

Daily Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

| Date. | Mean Height of the Barometer at 32° Fahr. | Range of the Barometer during the day. | | | Mean Dry Bulb Thermometer. | Range of the Tempera- ture during the day. | | |
|-------|---|---|---------|---------|-------------------------------|---|------|-------|
| | | Max. | Min. | Diff. | | Max. | Min. | Diff. |
| | Inches. | Inches. | Inches. | Inches. | o | o | o | o |
| 1 | 29.729 | 29.794 | 29.673 | 0.121 | 83.1 | 87.8 | 79.5 | 8.3 |
| 2 | .680 | .748 | .596 | .152 | 84.0 | 89.5 | 81.5 | 8.0 |
| 3 | .608 | .677 | .553 | .124 | 83.2 | 88.2 | 76.6 | 11.6 |
| 4 | .629 | .686 | .548 | .138 | 82.6 | 88.3 | 79.0 | 9.3 |
| 5 | .624 | .697 | .543 | .154 | 82.1 | 87.8 | 78.6 | 9.2 |
| 6 | <i>Sunday.</i> | | | | | | | |
| 7 | .536 | .585 | .456 | .129 | 81.6 | 86.0 | 79.2 | 6.8 |
| 8 | .473 | .553 | .374 | .179 | 77.8 | 79.6 | 76.8 | 2.8 |
| 9 | .566 | .662 | .488 | .174 | 79.1 | 83.0 | 75.6 | 7.4 |
| 10 | .666 | .720 | .621 | .099 | 80.3 | 83.6 | 78.5 | 5.1 |
| 11 | .738 | .805 | .679 | .126 | 82.7 | 88.4 | 78.4 | 10.0 |
| 12 | .764 | .840 | .690 | .150 | 84.2 | 89.2 | 80.0 | 9.2 |
| 13 | <i>Sunday.</i> | | | | | | | |
| 14 | .690 | .753 | .618 | .135 | 85.1 | 91.0 | 82.4 | 8.6 |
| 15 | .746 | .814 | .685 | .129 | 84.0 | 90.2 | 80.4 | 9.8 |
| 16 | .749 | .813 | .669 | .144 | 85.5 | 91.3 | 81.4 | 9.9 |
| 17 | .718 | .790 | .637 | .153 | 84.7 | 89.4 | 81.6 | 7.8 |
| 18 | .731 | .773 | .669 | .104 | 81.2 | 86.8 | 76.4 | 10.4 |
| 19 | .772 | .820 | .732 | .088 | 80.5 | 84.6 | 78.6 | 6.0 |
| 20 | <i>Sunday.</i> | | | | | | | |
| 21 | .800 | .848 | .755 | .093 | 79.4 | 82.3 | 78.2 | 4.1 |
| 22 | .774 | .833 | .721 | .112 | 81.2 | 85.2 | 79.1 | 6.1 |
| 23 | .776 | .837 | .722 | .115 | 81.4 | 87.2 | 78.6 | 8.6 |
| 24 | .748 | .798 | .685 | .113 | 81.7 | 85.8 | 78.0 | 7.8 |
| 25 | .763 | .823 | .697 | .126 | 83.5 | 89.2 | 79.6 | 9.6 |
| 26 | .756 | .818 | .696 | .122 | 82.0 | 85.4 | 79.6 | 5.8 |
| 27 | <i>Sunday.</i> | | | | | | | |
| 28 | .749 | .800 | .689 | .111 | 85.3 | 91.6 | 80.1 | 11.5 |
| 29 | .781 | .834 | .722 | .112 | 84.0 | 90.6 | 78.6 | 12.0 |
| 30 | .764 | .837 | .683 | .154 | 83.6 | 91.6 | 77.4 | 14.2 |

The Mean height of the Barometer, as likewise the Mean Dry and Wet Bulb Thermometers are derived from the twenty-four hourly observations made during the day.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of September, 1857.*

Daily Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon. (Continued.)

| Date. | Mean Wet Bulb Thermo- meter. | Dry Bulb above Wet. | Computed Dew Point. | Dry Bulb above Dew Point. | Mean Elastic force of Vapour. | Mean Weight of Vapour in a cubic foot of Air. | Additional Weight of Va- pour required for com- plete saturation. | Mean degree of Humidity, complete saturation be- ing unity. |
|-------|---------------------------------|---------------------|---------------------|------------------------------|----------------------------------|--|---|---|
| | o | o | o | o | Inches. | T. gr. | T. gr. | |
| 1 | 79.8 | 3.3 | 78.1 | 5.0 | .943 | 10.12 | 1.74 | .85 |
| 2 | 80.7 | 3.3 | 79.0 | 5.0 | .970 | .40 | .77 | .86 |
| 3 | 79.8 | 3.4 | 78.1 | 5.1 | .943 | .12 | .77 | .85 |
| 4 | 79.4 | 3.2 | 77.8 | 4.8 | .934 | .03 | .65 | .86 |
| 5 | 79.5 | 2.6 | 78.2 | 3.9 | .946 | .17 | .34 | .88 |
| 6 | <i>Sunday.</i> | | | | | | | |
| 7 | 78.3 | 3.3 | 76.6 | 5.0 | .899 | 9.67 | .67 | .85 |
| 8 | 76.0 | 1.8 | 75.1 | 2.7 | .857 | .28 | 0.85 | .92 |
| 9 | 77.3 | 1.8 | 76.4 | 2.7 | .893 | .66 | .87 | .92 |
| 10 | 78.5 | 1.8 | 77.6 | 2.7 | .928 | 10.01 | .90 | .92 |
| 11 | 79.7 | 3.0 | 78.2 | 4.5 | .946 | .15 | 1.57 | .87 |
| 12 | 80.2 | 4.0 | 78.2 | 6.0 | .946 | .13 | 2.11 | .83 |
| 13 | <i>Sunday.</i> | | | | | | | |
| 14 | 81.0 | 4.1 | 78.9 | 6.2 | .967 | .34 | .23 | .82 |
| 15 | 80.5 | 3.5 | 78.7 | 5.3 | .961 | .31 | 1.86 | .85 |
| 16 | 81.1 | 4.4 | 78.9 | 6.6 | .967 | .32 | 2.40 | .81 |
| 17 | 80.5 | 4.2 | 78.4 | 6.3 | .952 | .19 | .23 | .82 |
| 18 | 77.6 | 3.6 | 75.8 | 5.4 | .876 | 9.44 | 1.77 | .84 |
| 19 | 78.1 | 2.4 | 76.9 | 3.6 | .908 | .78 | .20 | .89 |
| 20 | <i>Sunday</i> | | | | | | | |
| 21 | 77.4 | 2.0 | 76.4 | 3.0 | .893 | .66 | 0.94 | .91 |
| 22 | 78.8 | 2.4 | 77.6 | 3.6 | .928 | .99 | 1.22 | .89 |
| 23 | 78.7 | 2.7 | 77.3 | 4.1 | .919 | .90 | .37 | .88 |
| 24 | 79.0 | 2.7 | 77.6 | 4.1 | .928 | .99 | .38 | .88 |
| 25 | 79.5 | 4.0 | 77.5 | 6.0 | .925 | .92 | 2.08 | .83 |
| 26 | 79.3 | 2.7 | 77.9 | 4.1 | .937 | 10.08 | 1.39 | .88 |
| 27 | <i>Sunday</i> | | | | | | | |
| 28 | 79.9 | 5.4 | 77.2 | 8.1 | .916 | 9.79 | 2.85 | .78 |
| 29 | 77.2 | 6.8 | 73.8 | 10.2 | .822 | 8.80 | 3.37 | .72 |
| 30 | 77.0 | 6.6 | 73.7 | 9.9 | .819 | .78 | .25 | .73 |

All the Hygrometrical elements are computed by the Greenwich constants.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of September, 1857.*

Hourly Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

| Hour. | Mean Height of the Barometer at 32° Fahr. | Range of the Barometer for each hour during the month. | | | Mean Dry Bulb Thermometer. | Range of the Tempera- ture for each hour during the month. | | |
|----------------|---|--|---------|---------|-------------------------------|---|------|-------|
| | | Max. | Min. | Diff. | | Max. | Min. | Diff. |
| | Inches. | Inches. | Inches. | Inches. | ° | ° | ° | ° |
| Mid- night. | 29.719 | 29.819 | 29.524 | 0.295 | 80.7 | 84.2 | 77.2 | 7.0 |
| 1 | .707 | .803 | .511 | .292 | 80.4 | 83.6 | 76.8 | 6.8 |
| 2 | .697 | .798 | .507 | .291 | 80.2 | 83.2 | 76.8 | 6.4 |
| 3 | .687 | .785 | .491 | .294 | 79.7 | 83.0 | 76.6 | 6.4 |
| 4 | .685 | .775 | .484 | .291 | 79.7 | 82.6 | 76.0 | 6.6 |
| 5 | .696 | .787 | .478 | .309 | 79.5 | 82.4 | 76.0 | 6.4 |
| 6 | .710 | .802 | .481 | .321 | 79.5 | 82.6 | 75.6 | 7.0 |
| 7 | .729 | .822 | .500 | .322 | 80.1 | 82.8 | 75.6 | 7.2 |
| 8 | .750 | .839 | .509 | .330 | 81.9 | 84.8 | 77.3 | 7.5 |
| 9 | .759 | .845 | .490 | .355 | 83.1 | 86.4 | 77.8 | 8.6 |
| 10 | .759 | .846 | .489 | .357 | 83.8 | 87.8 | 76.8 | 11.0 |
| 11 | .745 | .848 | .456 | .392 | 85.0 | 89.0 | 77.2 | 11.8 |
| Noon. | .726 | .833 | .445 | .388 | 85.6 | 90.1 | 77.9 | 12.2 |
| 1 | .698 | .798 | .408 | .390 | 86.2 | 91.2 | 78.0 | 13.2 |
| 2 | .671 | .797 | .374 | .423 | 86.5 | 91.6 | 77.7 | 13.9 |
| 3 | .651 | .788 | .377 | .411 | 86.0 | 91.6 | 77.2 | 14.4 |
| 4 | .644 | .763 | .388 | .375 | 85.5 | 90.8 | 77.8 | 13.0 |
| 5 | .649 | .755 | .409 | .346 | 84.2 | 89.4 | 77.2 | 12.2 |
| 6 | .663 | .755 | .447 | .308 | 83.1 | 87.8 | 77.1 | 10.7 |
| 7 | .684 | .771 | .459 | .312 | 82.2 | 86.6 | 76.6 | 10.0 |
| 8 | .711 | .789 | .483 | .306 | 81.7 | 85.2 | 76.6 | 8.6 |
| 9 | .727 | .803 | .524 | .279 | 81.5 | 84.5 | 78.1 | 6.4 |
| 10 | .734 | .813 | .528 | .285 | 81.3 | 83.8 | 78.4 | 5.4 |
| 11 | .731 | .806 | .537 | .269 | 81.0 | 83.6 | 78.4 | 5.2 |

The Mean height of the Barometer, as likewise the Mean Dry and Wet Bulb Thermometers are derived from the observation made at the several hours during the month.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of September, 1857.*

Hourly Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

| Hour. | Mean Wet Bulb Ther- mometer. | Dry Bulb above Wet. | Computed Dew Point. | Dry Bulb above Dew Point. | Mean Elastic Force of Vapour. | Mean Weight of Va- pour in a cubic foot of Air. | Additional Weight of Vapour required for complete satu- ration. | Mean degree of Hu- midity, complete saturation being unity. |
|----------------|---------------------------------|---------------------|---------------------|------------------------------|----------------------------------|---|--|--|
| | o | o | o | o | Inches. | T. gr. | T. gr. | |
| Mid- night. | 78.6 | 2.1 | 77.5 | 3.2 | 0.925 | 9.98 | 1.06 | 0.90 |
| 1 | 78.4 | 2.0 | 77.4 | 3.0 | .922 | .95 | 0.99 | .91 |
| 2 | 78.3 | 1.9 | 77.3 | 2.9 | .919 | .92 | .96 | .91 |
| 3 | 78.0 | 1.7 | 77.1 | 2.6 | .913 | .86 | .86 | .92 |
| 4 | 77.9 | 1.8 | 77.0 | 2.7 | .910 | .83 | .89 | .92 |
| 5 | 77.7 | 1.8 | 76.8 | 2.7 | .905 | .77 | .89 | .92 |
| 6 | 77.8 | 1.7 | 76.9 | 2.6 | .908 | .80 | .86 | .92 |
| 7 | 78.3 | 1.8 | 77.4 | 2.7 | .922 | .95 | .89 | .92 |
| 8 | 79.1 | 2.8 | 77.7 | 4.2 | .931 | 10.02 | 1.42 | .88 |
| 9 | 79.3 | 3.8 | 77.4 | 5.7 | .922 | 9.89 | .97 | .83 |
| 10 | 79.4 | 4.4 | 77.2 | 6.6 | .916 | .81 | 2.29 | .81 |
| 11 | 79.9 | 5.1 | 77.3 | 7.7 | .919 | .82 | .71 | .78 |
| Noon. | 80.3 | 5.3 | 77.6 | 8.0 | .928 | .91 | .85 | .78 |
| 1 | 80.3 | 5.9 | 77.3 | 8.9 | .919 | .80 | 3.19 | .75 |
| 2 | 80.5 | 6.0 | 77.5 | 9.0 | .925 | .86 | .24 | .75 |
| 3 | 80.3 | 5.7 | 77.4 | 8.6 | .922 | .83 | .08 | .76 |
| 4 | 79.9 | 5.6 | 77.1 | 8.4 | .913 | .76 | 2.96 | .77 |
| 5 | 79.3 | 4.9 | 76.8 | 7.4 | .905 | .69 | .55 | .79 |
| 6 | 79.4 | 3.7 | 77.5 | 5.6 | .925 | .92 | 1.94 | .84 |
| 7 | 79.0 | 3.2 | 77.4 | 4.8 | .922 | .91 | .63 | .86 |
| 8 | 78.8 | 2.9 | 77.3 | 4.4 | .919 | .90 | .47 | .87 |
| 9 | 78.8 | 2.7 | 77.4 | 4.1 | .922 | .93 | .38 | .88 |
| 10 | 78.6 | 2.7 | 77.2 | 4.1 | .916 | .87 | .37 | .88 |
| 11 | 78.7 | 2.3 | 77.5 | 3.5 | .925 | .96 | .18 | .89 |

All the Hygrometrical elements are computed by the Greenwich constants.

Abstract of the Results of the Hourly Meteorological Observations taken at the Surveyor General's Office, Calcutta.

in the month of September, 1857.

Solar Radiation, Weather, &c.

| Date. | Max. Solar radiation. | Rain Gauge 5 feet above Ground. | Prevailing direction of the Wind. | General Aspect of the Sky. |
|-------|-----------------------|---------------------------------|-----------------------------------|---|
| | o | Inches. | | |
| 1 | .. | 0.08 | E. & S. | Sertd. ∩i & ∪i also raining at 1 P. M. |
| 2 | .. | .. | S. E. & S. W. | Cloudy; also slightly drizzling between 11 A. M. & Noon. [& 7 P. M. |
| 3 | 114.0 | 1.34 | S. W. & E. & S. | Cloudy, also heavily raining between 6 |
| 4 | 122.0 | .. | S. W. & E. | Scatd. ∩i & ∩i till 7 A. M. scatd. clouds afterwards. [tween 9 & 11 A. M. |
| 5 | .. | 0.18 | Variable. | Scatd. clouds; also raining slightly be- |
| 6 | <i>Sunday.</i> | 0.08 | | |
| 7 | .. | 0.16 | E. & N. E. | Cloudy and constantly raining. |
| 8 | .. | 4.10 | E. (high.) | Cloudy and raining incessantly. |
| 9 | .. | 2.21 | S. E. & E. & N. E. [(high) | Cloudy and raining incessantly before sun rise and occasionally after it. |
| 10 | .. | 1.14 | E. & S. | More or less cloudy till 7 P. M. cloudless afterwards; also heavy rain at 7 A. M. and 6 P. M. |
| 11 | 113.4 | .. | E. & S. W. | Cloudy till 8 P. M. cloudless afterwards. |
| 12 | 135.0 | .. | S. E. & S. W. | Cloudless till 3 A. M. cloudy afterwards. |
| 13 | <i>Sunday.</i> | | | |
| 14 | 138.0 | 0.56 | S. W. & S. | Cloudy, also raining heavily between 4 and 5 P. M. |
| 15 | .. | .. | S. & N. E. & N. W. | Cloudy till 8 P. M. cloudless afterwards, also slightly raining at 3 P. M. |
| 16 | 133.0 | .. | N. E. & calm. | Cloudless till 7 A. M. Scatd. ∪i afterwards. |
| 17 | 119.9 | .. | N. E. & E. & calm. | Cloudy. [& 8 P. M. |
| 18 | 120.0 | 1.28 | E. & N. E. | Scatd. clouds. Also raining between 2 |
| 19 | .. | 0.08 | S. E. & E. | More or less cloudy the whole day, also slightly raining between 11 A. M. and 2 P. M. |
| 20 | <i>Sunday.</i> | 0.65 | | |
| 21 | .. | 0.79 | S. E. | Cloudy also raining occasionally. |
| 22 | .. | 0.26 | S. & S. E. | Cloudy and slightly drizzling four times. |
| 23 | .. | 0.22 | S. & S. E. | Cloudy also raining between 3 & 4 P. M. |
| 24 | .. | .. | S. & S. E. | Cloudy. |
| 25 | 140.0 | .. | W. & S. | Cloudless till 5 A. M. Scatd. clouds afterwards. Also very slight drizzling between 5 and 6 P. M. |
| 26 | .. | 0.17 | N. & W. | Cloudy also drizzling about Noon. |
| 27 | <i>Sunday.</i> | | | |
| 28 | 132.8 | .. | calm & N. & N. W. | Cloudless till 8 A. M. scatd. ∪i till 3 P. M. cloudless afterwards. |
| 29 | 137.0 | .. | N. & N. W. | Cloudless. |
| 30 | 138.0 | .. | N. & N. E. | Cloudless. |

∩i Cirri, ∩i Cirro strati, ∪i Cumuli, ∪i Cumulo strati, ∩i Nimbi, —i Strati, ∩i Cirro cumuli.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of September, 1857.*

MONTHLY RESULTS.

| | | | Inches. |
|--|----|----|---------|
| Mean height of the Barometer for the month, | .. | .. | 29.705 |
| Max. height of the Barometer occurred at 11 A. M. on the 21st, | .. | .. | 29.848 |
| Min. height of the Barometer occurred at 2 P. M. on the 8th, | .. | .. | 29.374 |
| Extreme range of the Barometer during the month, | .. | .. | 0.474 |

| | | | |
|--|----|----|------|
| | | | 0 |
| Mean Dry Bulb Thermometer for the month, | .. | .. | 82.5 |
| Max. Temperature occurred at 3 P. M. on the 28th & also 2 P. M. on the 30th, | .. | .. | 91.6 |
| Min. Temperature occurred at 6 A. M. and also at 7 A. M. on the 9th, | .. | .. | 75.6 |
| Extreme range of the Temperature during the month, | .. | .. | 16.0 |

| | | | |
|---|----|----|---------|
| | | | 0 |
| Mean Wet Bulb Thermometer for the month, | .. | .. | 79.0 |
| Mean Dry Bulb Thermometer above Mean Wet Bulb Thermometer, .. | .. | .. | 3.5 |
| Computed Mean Dew-point for the month, .. | .. | .. | 77.2 |
| Mean Dry Bulb Thermometer above computed mean Dew-point, .. | .. | .. | 5.3 |
| | | | Inches. |
| Mean Elastic force of Vapour for the month, | .. | .. | 0.916 |

| | | | |
|---|----|----|--------------|
| | | | Troy grains. |
| Mean Weight of Vapour for the month, .. | .. | .. | 9.85 |
| Additional Weight of Vapour required for complete saturation, .. | .. | .. | 1.79 |
| Mean degree of humidity for the month, complete saturation being unity, | .. | .. | 0.85 |

| | | | |
|---|----|----|------------|
| | | | Inches. |
| Rained 20 days, Max. fall of rain during 24 hours, .. | .. | .. | 4.10 |
| Total amount of rain during the month, .. | .. | .. | 13.30 |
| Prevailing direction of the Wind, .. | .. | .. | E. & S. E. |

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of September, 1857.*

MONTHLY RESULTS.

Table showing the number of days on which at a given hour any particular wind
blew, together with the number of days on which at the same hour when
any particular wind was blowing it rained.

| Hour. | N. | Rain on. | N. E. | Rain on. | E. | Rain on. | S. E. | Rain on. | S. | Rain on. | S. W. | Rain on. | W. | Rain on. | N. W. | Rain on. | Calm. | Missed. |
|-----------|----|----------|-------|----------|----|--------------|-------|----------|----|----------|-------|----------|----|----------|-------|----------|-------|---------|
| | | | | | | No. of days. | | | | | | | | | | | | |
| Midnight. | 1 | | 3 | 1 | 5 | | 5 | 1 | 3 | | 3 | | 1 | | 1 | | 3 | 1 |
| 1 | 2 | | 1 | 1 | 6 | | 5 | | 3 | | 3 | | 2 | | 1 | | 3 | |
| 2 | 2 | | 1 | 1 | 6 | 1 | 6 | 1 | 4 | | 1 | | 2 | | 1 | | 3 | |
| 3 | 2 | | 2 | 2 | 5 | 1 | 6 | 1 | 3 | | 1 | | 1 | | 1 | | 2 | 3 |
| 4 | 2 | | 1 | 1 | 7 | 2 | 6 | 1 | 2 | | 1 | | 2 | 1 | 1 | | 3 | 1 |
| 5 | 1 | | 1 | 1 | 7 | 2 | 6 | | 3 | | 2 | | 2 | | 1 | | 3 | |
| 6 | 2 | | 2 | 1 | 4 | | 7 | | 3 | | 2 | | 2 | | 1 | | 3 | |
| 7 | 2 | | 1 | | 7 | 3 | 5 | | 4 | | 1 | | 2 | | 1 | | 3 | |
| 8 | 4 | | 3 | | 7 | 2 | 5 | | 1 | | 3 | | 3 | | | | | |
| 9 | 3 | | 4 | 1 | 6 | | 4 | 1 | 1 | | 3 | | 4 | | 1 | | | |
| 10 | 5 | | 3 | 1 | 5 | | 6 | 1 | 1 | | | | 4 | | 2 | | | |
| 11 | 4 | 1 | 3 | | 5 | 1 | 7 | 1 | 2 | | 3 | | | | 2 | | | |
| Noon. | 5 | 1 | 5 | 1 | 2 | 1 | 5 | 2 | 4 | 1 | 2 | | 1 | | 2 | | | |
| 1 | 5 | 1 | 4 | | 4 | 1 | 3 | 1 | 4 | 2 | 3 | | 1 | | 2 | | | |
| 2 | 4 | | 3 | 1 | 4 | 1 | 5 | 2 | 2 | | 5 | | 1 | | 2 | | | |
| 3 | 2 | | 4 | 1 | 5 | 2 | 4 | 1 | 3 | | 4 | 1 | | | 4 | 1 | | |
| 4 | 1 | | 3 | | 4 | 1 | 6 | 1 | 6 | 1 | 2 | | 1 | | 3 | | | |
| 5 | 2 | 1 | 3 | | 6 | 1 | 7 | 2 | 5 | 1 | 1 | 1 | | | 1 | | | |
| 6 | 2 | | 3 | | 6 | 4 | 4 | | 6 | 2 | 3 | | 1 | 1 | 1 | | | |
| 7 | 2 | | 4 | | 5 | 2 | 4 | | 7 | | 2 | | 1 | | 1 | | | |
| 8 | 1 | | 3 | | 6 | 1 | 3 | | 7 | | 3 | | 1 | | 1 | | 1 | |
| 9 | 1 | | 2 | | 5 | | 2 | | 7 | 1 | 4 | | 1 | | 1 | | 1 | 2 |
| 10 | | | 3 | | 7 | 1 | 2 | | 6 | | 4 | | 1 | | 1 | | 1 | 1 |
| 11 | 1 | | 3 | | 7 | 1 | 3 | 1 | 6 | | 3 | | 1 | | | | 1 | 1 |

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of October, 1857.*

Latitude 22° 33' 1" North. Longitude 88° 20' 34" East.

Feet.

Height of the Cistern of the Standard Barometer above the Sea level, 18.11

Daily Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

| Date. | Mean Height of the Barometer at 32° Fahr. | Range of the Barometer during the day. | | | Mean Dry Bulb Thermometer. | Range of the Tempera- ture during the day. | | |
|-------|---|---|---------|---------|-------------------------------|---|------|-------|
| | | Max. | Min. | Diff. | | Max. | Min. | Diff. |
| | Inches. | Inches. | Inches. | Inches. | o | o | o | o |
| 1 | 29.753 | 29.801 | 29.681 | 0.120 | 83.5 | 90.7 | 76.4 | 14.3 |
| 2 | .760 | .817 | .694 | .123 | 84.9 | 91.2 | 79.0 | 12.2 |
| 3 | .784 | .838 | .725 | .113 | 84.5 | 90.7 | 79.9 | 10.8 |
| 4 | <i>Sunday.</i> | | | | | | | |
| 5 | .839 | .895 | .778 | .117 | 84.8 | 91.8 | 81.2 | 10.6 |
| 6 | .832 | .897 | .776 | .121 | 82.1 | 87.9 | 79.0 | 8.9 |
| 7 | .819 | .869 | .771 | .098 | 81.7 | 88.0 | 78.2 | 9.8 |
| 8 | .861 | .916 | .813 | .103 | 82.8 | 88.2 | 77.7 | 10.5 |
| 9 | .912 | .997 | .853 | .144 | 81.2 | 87.8 | 77.8 | 10.0 |
| 10 | .891 | .967 | .822 | .145 | 83.0 | 88.7 | 78.2 | 10.5 |
| 11 | <i>Sunday.</i> | | | | | | | |
| 12 | .882 | .955 | .814 | .141 | 83.0 | 88.1 | 78.4 | 9.7 |
| 13 | .922 | 30.000 | .856 | .144 | 82.9 | 89.2 | 78.1 | 11.1 |
| 14 | .959 | .040 | .914 | .126 | 82.2 | 87.9 | 76.9 | 11.0 |
| 15 | .935 | .020 | .847 | .173 | 81.9 | 88.7 | 75.8 | 12.9 |
| 16 | .870 | 29.946 | .793 | .153 | 82.9 | 89.0 | 76.8 | 12.2 |
| 17 | .856 | .938 | .800 | .138 | 82.9 | 88.3 | 79.6 | 8.7 |
| 18 | <i>Sunday.</i> | | | | | | | |
| 19 | .890 | .969 | .833 | .136 | 84.1 | 89.8 | 80.0 | 9.8 |
| 20 | .906 | .982 | .854 | .128 | 81.7 | 88.0 | 76.2 | 11.8 |
| 21 | .933 | 30.003 | .877 | .126 | 80.1 | 87.4 | 73.2 | 14.2 |
| 22 | .942 | .014 | .886 | .128 | 80.4 | 87.7 | 73.8 | 13.9 |
| 23 | .914 | 29.973 | .842 | .131 | 80.9 | 87.2 | 75.0 | 12.2 |
| 24 | .885 | .956 | .831 | .125 | 81.6 | 87.0 | 77.2 | 9.8 |
| 25 | <i>Sunday.</i> | | | | | | | |
| 26 | .934 | .978 | .892 | .086 | 77.3 | 79.5 | 73.6 | 5.9 |
| 27 | .890 | .961 | .819 | .142 | 77.9 | 82.0 | 73.7 | 8.3 |
| 28 | .826 | .891 | .761 | .130 | 77.9 | 83.0 | 73.6 | 9.4 |
| 29 | .825 | .884 | .768 | .116 | 78.3 | 84.0 | 72.2 | 11.8 |
| 30 | .844 | .919 | .790 | .129 | 79.5 | 87.1 | 74.6 | 12.5 |
| 31 | .831 | .903 | .770 | .133 | 80.0 | 86.8 | 75.2 | 11.6 |

The Mean height of the Barometer, as likewise the Mean Dry and Wet Bulb Thermometers are derived, from the twenty-four hourly observations made, during the day.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of October, 1857.*

Daily Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon. (Continued.)

| Date. | Mean Wet Bulb Ther- mometer. | Dry Bulb above Wet. | Computed Dew Point. | Dry Bulb above Dew Point. | Mean Elastic force of Vapour. | Mean Weight of Vapour in a cubic foot of air. | Additional Weight of Va- pour required for com- plete saturation. | Mean degree of Humi- dity, complete satura- tion being unity. |
|-------|---------------------------------|---------------------|---------------------|------------------------------|----------------------------------|--|---|---|
| | ° | ° | ° | ° | Inches. | T. gr. | T. gr. | |
| 1 | 77.1 | 6.4 | 73.9 | 9.6 | 0.824 | 8.83 | 3.17 | 0.74 |
| 2 | 79.0 | 5.9 | 76.0 | 8.9 | .882 | 9.43 | .06 | .76 |
| 3 | 78.7 | 5.8 | 75.8 | 8.7 | .876 | .37 | 2.98 | .76 |
| 4 | <i>Sunday.</i> | | | | | | | |
| 5 | 79.2 | 5.6 | 76.4 | 8.4 | .893 | .56 | .90 | .77 |
| 6 | 77.8 | 4.3 | 75.6 | 6.5 | .871 | .35 | .16 | .81 |
| 7 | 77.5 | 4.2 | 75.4 | 6.3 | .865 | .32 | .05 | .82 |
| 8 | 78.1 | 4.7 | 75.7 | 7.1 | .873 | .38 | .37 | .80 |
| 9 | 78.0 | 3.2 | 76.4 | 4.8 | .893 | .62 | 1.59 | .86 |
| 10 | 78.5 | 4.5 | 76.2 | 6.8 | .887 | .52 | 2.30 | .81 |
| 11 | <i>Sunday.</i> | | | | | | | |
| 12 | 78.2 | 4.8 | 75.8 | 7.2 | .876 | .41 | .41 | .80 |
| 13 | 77.0 | 5.9 | 74.0 | 8.9 | .827 | 8.88 | .91 | .75 |
| 14 | 75.3 | 6.9 | 71.8 | 10.4 | .771 | .28 | 3.26 | .72 |
| 15 | 75.3 | 6.6 | 72.0 | 9.9 | .776 | .33 | .11 | .73 |
| 16 | 76.6 | 6.3 | 73.4 | 9.5 | .811 | .69 | .10 | .74 |
| 17 | 78.0 | 4.9 | 75.5 | 7.4 | .868 | 9.33 | 2.46 | .79 |
| 18 | <i>Sunday.</i> | | | | | | | |
| 19 | 76.7 | 7.4 | 73.0 | 11.1 | .801 | 8.57 | 3.64 | .70 |
| 20 | 74.1 | 7.6 | 70.3 | 11.4 | .734 | 7.90 | .47 | .70 |
| 21 | 72.9 | 7.2 | 69.3 | 10.8 | .711 | .66 | .18 | .71 |
| 22 | 73.2 | 7.2 | 69.6 | 10.8 | .717 | .73 | .21 | .71 |
| 23 | 74.5 | 6.4 | 71.3 | 9.6 | .758 | 8.16 | 2.94 | .74 |
| 24 | 75.8 | 5.8 | 72.9 | 8.7 | .797 | .57 | .77 | .76 |
| 25 | <i>Sunday.</i> | | | | | | | |
| 26 | 73.7 | 3.6 | 71.9 | 5.4 | .773 | .40 | 1.58 | .84 |
| 27 | 74.0 | 3.9 | 72.0 | 5.9 | .776 | .40 | .76 | .83 |
| 28 | 72.9 | 5.0 | 70.4 | 7.5 | .736 | 7.97 | 2.19 | .78 |
| 29 | 72.4 | 5.9 | 69.4 | 8.9 | .713 | .72 | .56 | .75 |
| 30 | 73.1 | 6.4 | 69.9 | 9.6 | .725 | .82 | .84 | .73 |
| 31 | 72.7 | 7.3 | 69.0 | 11.0 | .704 | .59 | 3.22 | .70 |

All the Hygrometrical elements are computed by the Greenwich Constants.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of October, 1857.*

Hourly Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

| Hour. | Mean Height of the Barometer at 32° Fahr. | Range of the Barometer for each hour during the month. | | | Mean Dry Bulb Thermometer. | Range of the Temperature for each hour during the month. | | |
|----------------|---|--|---------|---------|-------------------------------|--|------|-------|
| | | Max. | Min. | Diff. | | Max. | Min. | Diff. |
| | Inches. | Inches. | Inches. | Inches. | o | o | o | o |
| Mid- night. | 29.874 | 29.967 | 29.773 | 0.194 | 79.0 | 82.9 | 74.9 | 8.0 |
| 1 | .865 | .950 | .763 | .187 | 78.8 | 82.9 | 74.4 | 8.5 |
| 2 | .855 | .948 | .759 | .189 | 78.1 | 82.6 | 73.9 | 8.7 |
| 3 | .851 | .945 | .755 | .190 | 77.8 | 82.4 | 73.5 | 8.9 |
| 4 | .857 | .959 | .753 | .206 | 77.4 | 82.2 | 72.9 | 9.3 |
| 5 | .867 | .972 | .748 | .224 | 77.1 | 81.8 | 72.3 | 9.5 |
| 6 | .883 | .972 | .766 | .206 | 76.9 | 81.4 | 72.2 | 9.2 |
| 7 | .906 | .993 | .782 | .211 | 77.8 | 83.1 | 73.1 | 10.0 |
| 8 | .928 | 30.024 | .801 | .223 | 80.6 | 86.0 | 73.6 | 12.4 |
| 9 | .937 | .040 | .800 | .240 | 82.3 | 87.0 | 75.0 | 12.0 |
| 10 | .935 | .038 | .795 | .243 | 83.7 | 88.8 | 77.0 | 11.8 |
| 11 | .914 | .016 | .778 | .238 | 85.1 | 88.7 | 77.7 | 11.0 |
| Noon. | .888 | 29.990 | .758 | .232 | 86.2 | 89.4 | 79.2 | 10.2 |
| 1 | .858 | .963 | .729 | .234 | 86.9 | 90.3 | 79.1 | 11.2 |
| 2 | .834 | .954 | .704 | .250 | 87.0 | 90.9 | 79.5 | 11.4 |
| 3 | .816 | .925 | .686 | .239 | 87.1 | 91.8 | 79.3 | 12.5 |
| 4 | .817 | .921 | .698 | .223 | 86.0 | 91.2 | 79.2 | 12.0 |
| 5 | .816 | .914 | .685 | .229 | 84.9 | 89.7 | 78.0 | 11.7 |
| 6 | .823 | .919 | .681 | .238 | 83.1 | 87.2 | 77.4 | 9.8 |
| 7 | .846 | .939 | .718 | .221 | 81.8 | 86.0 | 76.8 | 9.2 |
| 8 | .869 | .953 | .745 | .208 | 81.1 | 84.9 | 76.8 | 8.1 |
| 9 | .882 | .971 | .771 | .200 | 80.4 | 84.5 | 76.2 | 8.3 |
| 10 | .885 | .973 | .780 | .193 | 79.9 | 84.0 | 76.0 | 8.0 |
| 11 | .880 | .976 | .776 | .200 | 79.4 | 82.8 | 75.8 | 7.0 |

The Mean Height of the Barometer, as likewise the Mean Dry and Wet Bulb Thermometers are derived from the observations made at the several hours during the month.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of October, 1857.*

Hourly Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.—(Continued.)

| Hour. | Mean Wet Bulb Thermometer. | Dry Bulb above Wet. | Computed Dew point. | Dry Bulb above Dew point. | Mean elastic force of Vapour. | Mean Weight of Va- pour in a Cubic foot of Air. | Additional weight of vapour required for complete saturation. | Mean degree of hu- midity, complete satu- ration being unity. |
|----------------|-------------------------------|---------------------|---------------------|------------------------------|----------------------------------|---|---|---|
| | o | o | o | o | Inches. | Troy grs. | Troy grs. | |
| Mid- night. | 75.9 | 3.1 | 74.3 | 4.7 | 0.835 | 9.03 | 1.47 | 0.86 |
| 1 | 75.7 | 3.1 | 74.1 | 4.7 | .830 | 8.98 | .46 | .86 |
| 2 | 75.2 | 2.9 | 73.7 | 4.4 | .819 | .89 | .33 | .87 |
| 3 | 75.0 | 2.8 | 73.6 | 4.2 | .817 | .86 | .27 | .88 |
| 4 | 74.8 | 2.6 | 73.5 | 3.9 | .814 | .83 | .18 | .88 |
| 5 | 74.6 | 2.5 | 73.3 | 3.8 | .809 | .77 | .15 | .88 |
| 6 | 74.4 | 2.5 | 73.1 | 3.8 | .803 | .72 | .14 | .88 |
| 7 | 74.8 | 3.0 | 73.3 | 4.5 | .809 | .75 | .38 | .86 |
| 8 | 75.4 | 5.2 | 72.8 | 7.8 | .795 | .57 | 2.44 | .78 |
| 9 | 75.8 | 6.5 | 72.5 | 9.8 | .787 | .46 | 3.12 | .73 |
| 10 | 76.3 | 7.4 | 72.6 | 11.1 | .790 | .47 | .60 | .70 |
| 11 | 76.7 | 8.4 | 72.5 | 12.6 | .787 | .41 | 4.16 | .67 |
| Noon. | 76.9 | 9.3 | 72.2 | 14.0 | .781 | .31 | .68 | .64 |
| 1 | 77.1 | 9.8 | 72.2 | 14.7 | .781 | .29 | .96 | .63 |
| 2 | 76.7 | 10.3 | 71.5 | 15.5 | .763 | .11 | 5.18 | .61 |
| 3 | 76.7 | 10.4 | 71.5 | 15.6 | .763 | .11 | .22 | .61 |
| 4 | 76.5 | 9.5 | 71.7 | 14.3 | .768 | .19 | 4.72 | .63 |
| 5 | 76.3 | 8.6 | 72.0 | 12.9 | .776 | .28 | .21 | .66 |
| 6 | 76.4 | 6.7 | 73.0 | 10.1 | .801 | .58 | 3.28 | .72 |
| 7 | 76.4 | 5.4 | 73.7 | 8.1 | .819 | .82 | 2.58 | .77 |
| 8 | 76.5 | 4.6 | 74.2 | 6.9 | .832 | .96 | .21 | .80 |
| 9 | 76.2 | 4.2 | 74.1 | 6.3 | .830 | .96 | 1.98 | .82 |
| 10 | 76.1 | 3.8 | 74.2 | 5.7 | .832 | .98 | .80 | .83 |
| 11 | 75.7 | 3.7 | 73.8 | 5.6 | .822 | .87 | .75 | .84 |

All the Hygrometrical elements are computed by the Greenwich constants.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of October, 1857.*

Solar Radiation, Weather, &c.

| Date. | Max. Solar radiation. | Rain Gauge 5 feet above Ground. | Prevailing direction of the Wind. | General Aspect of the Sky. |
|-------|-----------------------|---------------------------------|-----------------------------------|--|
| | ° | Inches. | | |
| 1 | 140.0 | .. | N. & Calm. | Cloudless. |
| 2 | 140.0 | 0.20 | N. & N. W. | Cloudless till 9 A. M. Scatd. ci till 3 P. M. cloudless till 9 P. M. cloudy and raining from 10 P. M. to 11 P. M. |
| 3 | 128.4 | .. | N. & N. W. | Cloudless till 7 A. M. Scatd. ci till 7 P. M. cloudless afterwards. |
| 4 | <i>Sunday.</i> | | | |
| 5 | 147.0 | .. | Calm & N. W. | Cloudy till 3 A. M. cloudless till 9 A. M. various clouds afterwards. |
| 6 | 110.0 | 0.07 | S. W. & N. W. & E. | Cloudy the whole day. Also slightly drizzling between 2 and 5 P. M. |
| 7 | 129.0 | 0.14 | N. E. & E. | Scatd. clouds till 6 P. M. cloudless afterwards. Also little rain at 4 P. M. |
| 8 | 131.7 | .. | N. | Cloudless till 5 A. M. Scatd. ci till 6 P. M. cloudless afterwards. |
| 9 | 132.0 | 0.15 | S. & N. | Cloudless till 2 A. M. Scatd. clouds afterwards. Also drizzling between 7 and 10 A. M. |
| 10 | 134.6 | .. | S. W. & Calm. | Cloudless till 7 A. M. Scatd. ci till 6 P. M. cloudless afterwards. |
| 11 | <i>Sunday.</i> | 0.89 | | |
| 12 | 139.0 | .. | N. & Calm. | Scattered ci till 8 A. M. cloudy till 6 P. M. cloudless afterwards. |
| 13 | 142.0 | .. | N. E. | Cloudless till 4 A. M. Scatd. ci till 7 P. M. cloudless afterwards. |
| 14 | 140.0 | .. | N. W. & Calm. | Cloudless. |
| 15 | 135.8 | .. | Calm & N. W. & N. | Cloudless. |
| 16 | 135.4 | .. | N. E. | Cloudless till 10 A. M. Scatd. ci till 4 P. M. cloudless afterwards. |
| 17 | 138.0 | .. | Calm & S. E. & W. | Cloudless till 4 A. M. Scatd. ci till 10 A. M. scattered clouds till 7 P. M. cloudless afterwards, also very slightly drizzling at 7 P. M. |
| 18 | <i>Sunday.</i> | | | |
| 19 | 141.0 | .. | N. W. & N. & W. | Scatd. clouds till 5 A. M. cloudless till 10 A. M. Scatd. ci till 5 P. M. cloudless afterwards. |
| 20 | 142.0 | .. | N. & Calm. | Cloudless till 10 A. M. Scatd. ci till 2 P. M. cloudless afterwards. |
| 21 | 134.6 | .. | N. & Calm. | Cloudless till 9 A. M. Scatd. ci till 2 P. M. cloudless afterwards. |
| 22 | 140.0 | .. | N. & S. E. & N. E. | Cloudless. |

ci Cirri, ci cirro strati, ci cumuli, ci cumulo strati, ci nimbi, —i strati, ci cirro cumuli.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of October, 1857.*

Solar Radiation, Weather, &c.

| Date. | Max. Solar radiation. | Rain Gauge 5 feet above Ground. | Prevailing direction of the Wind. | General Aspect of the Sky. |
|-------|-----------------------|---------------------------------|-----------------------------------|---|
| | o | Inches. | | |
| 23 | 127.0 | .. | N. E. & Calm & s. w. | Cloudless till 6 A. M. Scatd. \i & \i till 1 P. M. Scatd. \i till 6 P. M. cloudless afterwards. |
| 24 | 133.0 | .. | S. & S. W. | Cloudless till 8 A. M. Scatd. \i till 6 P. M. cloudless afterwards. |
| 25 | <i>Sunday.</i> | | | |
| 26 | .. | 0.15 | N. E. & S. | Cloudy. Also drizzling between 3 and 8 A. M. |
| 27 | .. | .. | N. & N. E. & E. | Cloudy. |
| 28 | 124.0 | .. | N. W. & N. E. & N. | Cloudless till 5 A. M. Scatd. \i till 3 P. M. cloudless afterwards. |
| 29 | 134.0 | .. | N. & Calm. | Scatd. thin clouds till 5 A. M. Scatd. \i afterwards. |
| 30 | 139.5 | .. | N. | Cloudy. |
| 31 | 139.0 | .. | N. & N. W. | Scatd. clouds till 7 A. M. Scatd. \i & \i afterwards. |

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of October, 1857.*

MONTHLY RESULTS.

| | | | Inches. |
|--|----|----|---------|
| Mean height of the Barometer for the month, | .. | .. | 29.870 |
| Max. height of the Barometer, occurred at 9 A. M. on the 14th, | .. | .. | 30.040 |
| Min. height of the Barometer, occurred at 6 P. M. on the 1st, | .. | .. | 29.681 |
| Extreme Range of the Barometer during the month, | .. | .. | 0.359 |
| Mean of the Daily Max. Pressures, | .. | .. | 29.938 |
| Ditto ditto Min. ditto, | .. | .. | 29.810 |
| Mean Daily range of the Barometer during the month, | .. | .. | 0.128 |

| | | | ° |
|---|----|----|------|
| Mean Dry Bulb Thermometer for the month, | .. | .. | 81.6 |
| Max. Temperature, occurred at 3 P. M. on the 5th, | .. | .. | 91.8 |
| Min. Temperature, occurred at 6 A. M. on the 29th, | .. | .. | 72.2 |
| Extreme Range of the Temperature during the month, | .. | .. | 19.6 |
| Mean of the Daily Max. Temperatures, | .. | .. | 87.6 |
| Ditto ditto Min. ditto, | .. | .. | 76.7 |
| Mean Daily range of the Temperature during the month, | .. | .. | 10.9 |

| | | | ° |
|--|----|----|---------|
| Mean Wet Bulb Thermometer for the month, | .. | .. | 75.9 |
| Mean Dry Bulb Thermometer above Mean Wet Bulb Thermometer, | .. | .. | 5.7 |
| Computed Mean Dew Point for the month, | .. | .. | 73.0 |
| Mean Dry Bulb Thermometer above computed Mean Dew Point, | .. | .. | 8.6 |
| | | | Inches. |
| Mean Elastic force of vapour for the month, | .. | .. | 0.801 |

| | | | Troy grains. |
|---|----|----|--------------|
| Mean weight of vapour for the month, | .. | .. | 8.60 |
| Additional weight of vapour required for complete saturation, | .. | .. | 2.74 |
| Mean degree of Humidity for the month, complete saturation being unity, | .. | .. | 0.76 |

| | | | Inches. |
|---|----|----|------------|
| Rained 7 days. Max. fall of rain during 24 hours, | .. | .. | 0.89 |
| Total amount of rain during the month, | .. | .. | 1.60 |
| Prevailing direction of the Wind, | .. | .. | N. & N. W. |

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of October, 1857.*

MONTHLY RESULTS.

Table showing the number of days on which at a given hour any particular wind
blew, together with the number of days on which at the same hour,
when any particular wind was blowing it rained.

| Hour. | N. | Rain on. | N. E. | Rain on. | E. | Rain on. | S. E. | Rain on. | S. | Rain on. | S. W. | Rain on. | W. | Rain on. | N. W. | Rain on. | Calm. | Rain on. | Missed. |
|-----------|--------------|----------|-------|----------|----|----------|-------|----------|----|----------|-------|----------|----|----------|-------|----------|-------|----------|---------|
| | No. of days. | | | | | | | | | | | | | | | | | | |
| Midnight. | 10 | 1 | 1 | 1 | 1 | | | | 1 | | 2 | | 1 | | | | 11 | | |
| 1 | 9 | 1 | 1 | 1 | 1 | | | | 1 | | 2 | | 2 | | | | 10 | | 1 |
| 2 | 9 | 2 | 2 | 1 | 1 | | | | 1 | | 2 | | 2 | | | | 10 | | |
| 3 | 9 | 2 | 2 | 2 | 2 | | | | 1 | 1 | 2 | | 1 | | | | 9 | | 1 |
| 4 | 9 | 2 | 2 | 2 | 2 | | | | 1 | 1 | 2 | | 1 | | | | 9 | | 1 |
| 5 | 9 | 1 | 1 | 2 | 2 | | | | 1 | 1 | 1 | | 1 | | | | 8 | | 2 |
| 6 | 11 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | | 3 | 1 | 3 | | 7 | | |
| 7 | 11 | 4 | 1 | 1 | | | 2 | 1 | 1 | | | | 1 | | 4 | | 4 | | |
| 8 | 16 | 1 | 3 | 1 | 1 | | | | 1 | 1 | 1 | | 2 | | 2 | | 1 | | |
| 9 | 13 | | 7 | 1 | 1 | | | | 1 | 1 | 1 | | 1 | | 3 | | | | |
| 10 | 10 | | 6 | 3 | 3 | | | | | | 2 | 1 | | | 6 | | | | |
| 11 | 8 | | 8 | 3 | 3 | | | | | | 2 | | 1 | | 5 | | | | |
| Noon. | 7 | 9 | 1 | 1 | 1 | | | | | 3 | | | | | 7 | | | | |
| 1 | 6 | 7 | 1 | 1 | 1 | | | | | 2 | | 1 | | 10 | | | | | |
| 2 | 4 | 6 | 2 | 3 | 1 | | 1 | | | 3 | | 1 | | 10 | | | | | |
| 3 | 8 | 3 | 3 | 1 | 1 | | | | 2 | | 2 | | | 6 | | | | | |
| 4 | 9 | 2 | 1 | 1 | 1 | | 4 | | 1 | | 2 | | | 7 | | | | | 1 |
| 5 | 10 | 3 | 1 | 1 | 1 | | 2 | | 4 | | 1 | | | 6 | | | | | |
| 6 | 9 | 3 | 1 | 1 | 1 | | 4 | | 3 | | | | | 6 | | 1 | | | |
| 7 | 8 | 3 | 1 | 1 | 1 | | 2 | 1 | 3 | | 2 | | | 6 | | 2 | | | |
| 8 | 8 | 3 | 1 | 1 | 1 | | 2 | | 3 | | 2 | | | 5 | | 3 | | | |
| 9 | 7 | 3 | 1 | 1 | 1 | | 2 | | 2 | | 3 | | 1 | 4 | | 4 | | | |
| 10 | 7 | 3 | 1 | 1 | 1 | | 2 | | 2 | | 3 | | 1 | 4 | | 4 | | | |
| 11 | 8 | 2 | 1 | 1 | 1 | | 2 | | 2 | | 4 | 1 | 1 | 3 | | 4 | | | |

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of November, 1857.*

Latitude 22° 33' 1" North. Longitude 88° 20' 34" East.

feet.

Height of the Cistern of the Standard Barometer above the Sea level, 18.11

Daily Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

| Date. | Mean Height of the Barometer at 32° Fahr. | Range of the Barometer during the day. | | | Mean Dry Bulb Thermometer. | Range of the Tempera- ture during the day. | | |
|-------|---|---|---------|---------|-------------------------------|---|------|-------|
| | | Max. | Min. | Diff. | | Max. | Min. | Diff. |
| | Inches. | Inches. | Inches. | Inches. | o | o | o | o |
| 1 | <i>Sunday.</i> | | | | | | | |
| 2 | 29.882 | 29.940 | 29.828 | 0.112 | 79.5 | 87.5 | 72.8 | 14.7 |
| 3 | .910 | .975 | .853 | .122 | 79.0 | 86.8 | 73.6 | 13.2 |
| 4 | .888 | .974 | .832 | .142 | 75.5 | 83.2 | 69.0 | 14.2 |
| 5 | .858 | .932 | .794 | .138 | 76.1 | 85.0 | 69.4 | 15.6 |
| 6 | .848 | .930 | .791 | .139 | 75.2 | 84.7 | 67.4 | 17.3 |
| 7 | .865 | .936 | .818 | .118 | 73.6 | 82.2 | 65.6 | 16.6 |
| 8 | <i>Sunday.</i> | | | | | | | |
| 9 | .986 | 30.080 | .937 | .143 | 71.7 | 81.4 | 62.8 | 18.6 |
| 10 | .928 | .003 | .870 | .133 | 72.3 | 81.6 | 64.8 | 16.8 |
| 11 | .923 | 29.994 | .873 | .121 | 72.5 | 81.8 | 65.2 | 16.6 |
| 12 | .994 | 30.071 | .930 | .141 | 72.1 | 82.6 | 64.0 | 18.6 |
| 13 | 30.051 | .121 | .998 | .123 | 72.1 | 82.1 | 63.6 | 18.5 |
| 14 | .045 | .126 | .962 | .164 | 72.5 | 82.4 | 63.8 | 18.6 |
| 15 | <i>Sunday.</i> | | | | | | | |
| 16 | .062 | .145 | 30.004 | .141 | 73.8 | 83.2 | 66.3 | 16.9 |
| 17 | .048 | .120 | 29.980 | .110 | 74.2 | 82.8 | 67.2 | 15.6 |
| 18 | .015 | .083 | .957 | .126 | 73.2 | 81.2 | 66.1 | 15.1 |
| 19 | .031 | .107 | .979 | .128 | 70.5 | 79.7 | 63.2 | 16.5 |
| 20 | .038 | .131 | .964 | .167 | 69.6 | 79.6 | 61.0 | 18.6 |
| 21 | .003 | .079 | .958 | .121 | 70.4 | 79.4 | 62.6 | 16.8 |
| 22 | <i>Sunday.</i> | | | | | | | |
| 23 | 29.961 | .035 | .883 | .152 | 71.5 | 81.3 | 63.6 | 17.7 |
| 24 | .977 | .052 | .926 | .126 | 71.2 | 80.8 | 64.0 | 16.8 |
| 25 | .967 | .051 | .907 | .144 | 71.1 | 80.0 | 63.2 | 16.8 |
| 26 | .943 | .014 | .890 | .124 | 71.4 | 81.6 | 62.6 | 19.0 |
| 27 | .945 | .019 | .895 | .124 | 72.4 | 79.2 | 67.4 | 11.8 |
| 28 | .936 | .011 | .873 | .138 | 71.9 | 79.5 | 66.8 | 12.7 |
| 29 | <i>Sunday.</i> | | | | | | | |
| 30 | .976 | .037 | .923 | .114 | 71.3 | 79.6 | 66.8 | 12.8 |

The Mean height of the Barometer, as likewise the Mean Dry and Wet Bulb Thermometers are derived from the twenty-four hourly observations made during the day.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of November, 1857.*

Daily Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon. (Continued.)

| Date. | Mean Wet Bulb Thermo- meter. | Dry Bulb above Wet. | Computed Dew Point. | Dry Bulb above Dew Point. | Mean Elastic force of Vapour. | Mean Weight of Vapour in a cubic foot of Air. | Additional Weight of Va- pour required for com- plete saturation. | Mean degree of Humidity, complete saturation be- ing unity. |
|-------|---------------------------------|---------------------|---------------------|------------------------------|----------------------------------|--|---|---|
| | o | o | o | o | Inches. | T. gr. | T. gr. | |
| 1 | <i>Sunday.</i> | | | | | | | |
| 2 | 73.2 | 6.3 | 70.0 | 9.5 | 0.727 | 7.84 | 2.82 | 0.74 |
| 3 | 72.2 | 6.8 | 68.8 | 10.2 | .699 | .56 | .94 | .72 |
| 4 | 67.8 | 7.7 | 63.9 | 11.6 | .595 | 6.47 | .99 | .68 |
| 5 | 67.9 | 8.2 | 63.8 | 12.3 | .593 | .45 | 3.18 | .67 |
| 6 | 66.1 | 9.1 | 61.5 | 13.7 | .550 | 5.99 | .38 | .64 |
| 7 | 64.9 | 8.7 | 60.5 | 13.1 | .532 | .81 | .12 | .65 |
| 8 | <i>Sunday.</i> | | | | | | | |
| 9 | 64.7 | 7.0 | 61.2 | 10.5 | .544 | .97 | 2.46 | .71 |
| 10 | 65.1 | 7.2 | 61.5 | 10.8 | .550 | 6.02 | .56 | .70 |
| 11 | 65.1 | 7.4 | 61.4 | 11.1 | .548 | .00 | .63 | .70 |
| 12 | 64.1 | 8.0 | 60.1 | 12.0 | .525 | 5.75 | .78 | .67 |
| 13 | 64.4 | 7.7 | 60.5 | 11.6 | .532 | .83 | .70 | .68 |
| 14 | 66.4 | 6.1 | 63.3 | 9.2 | .584 | 6.39 | .24 | .74 |
| 15 | <i>Sunday.</i> | | | | | | | |
| 16 | 67.3 | 6.5 | 64.0 | 9.8 | .597 | .52 | .46 | .73 |
| 17 | 67.5 | 6.7 | 64.1 | 10.1 | .599 | .54 | .55 | .72 |
| 18 | 65.3 | 7.9 | 61.3 | 11.9 | .546 | 5.97 | .85 | .68 |
| 19 | 63.2 | 7.3 | 59.5 | 11.0 | .515 | .65 | .48 | .70 |
| 20 | 62.4 | 7.2 | 58.8 | 10.8 | .503 | .53 | .37 | .70 |
| 21 | 63.9 | 6.5 | 60.6 | 9.8 | .534 | .86 | .24 | .72 |
| 22 | <i>Sunday.</i> | | | | | | | |
| 23 | 64.9 | 6.6 | 61.6 | 9.9 | .552 | 6.05 | .33 | .72 |
| 24 | 63.8 | 7.4 | 60.1 | 11.1 | .525 | 5.76 | .54 | .69 |
| 25 | 64.0 | 7.1 | 60.4 | 10.7 | .530 | .82 | .46 | .70 |
| 26 | 64.6 | 6.8 | 61.2 | 10.2 | .544 | .98 | .37 | .72 |
| 27 | 67.5 | 4.9 | 65.0 | 7.4 | .617 | 6.77 | 1.83 | .79 |
| 28 | 67.0 | 4.9 | 64.5 | 7.4 | .607 | .67 | .81 | .79 |
| 29 | <i>Sunday.</i> | | | | | | | |
| 30 | 65.0 | 6.3 | 61.8 | 9.5 | .555 | .09 | 2.24 | .73 |

All the Hygrometrical elements are computed by the Greenwich constants.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of November, 1857.*

Hourly Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

| Hour. | Mean Height of the Barometer at 32° Fahr. | Range of the Barometer for each hour during the month. | | | Mean Dry Bulb Thermometer. | Range of the Tempera- ture for each hour during the month. | | |
|----------------|---|--|---------|---------|-------------------------------|---|------|-------|
| | | Max. | Min. | Diff. | | Max. | Min. | Diff. |
| | Inches. | Inches. | Inches. | Inches. | o | o | o | o |
| Mid- night. | 29.964 | 30.078 | 29.839 | 0.239 | 69.2 | 76.6 | 65.6 | 11.0 |
| 1 | .957 | .065 | .810 | .225 | 68.5 | 75.8 | 64.8 | 11.0 |
| 2 | .948 | .049 | .835 | .214 | 68.0 | 76.0 | 63.8 | 12.2 |
| 3 | .946 | .041 | .831 | .210 | 67.3 | 75.3 | 62.8 | 12.5 |
| 4 | .940 | .049 | .828 | .221 | 66.8 | 74.6 | 62.0 | 12.6 |
| 5 | .949 | .059 | .841 | .218 | 66.4 | 74.0 | 61.6 | 12.4 |
| 6 | .970 | .081 | .856 | .225 | 65.8 | 73.6 | 61.0 | 12.6 |
| 7 | .996 | .108 | .881 | .227 | 66.0 | 74.3 | 61.6 | 12.7 |
| 8 | 30.022 | .126 | .922 | .204 | 69.7 | 77.9 | 64.2 | 13.7 |
| 9 | .037 | .145 | .930 | .215 | 73.1 | 80.6 | 69.6 | 11.0 |
| 10 | .032 | .141 | .929 | .212 | 75.8 | 81.9 | 71.8 | 10.1 |
| 11 | .010 | .126 | .906 | .220 | 78.3 | 83.2 | 74.2 | 9.0 |
| Noon. | 29.979 | .083 | .877 | .206 | 80.2 | 85.6 | 76.6 | 9.0 |
| 1 | .944 | .050 | .831 | .219 | 81.3 | 86.6 | 78.4 | 8.2 |
| 2 | .921 | .023 | .805 | .218 | 81.9 | 87.5 | 78.6 | 8.9 |
| 3 | .911 | .018 | .791 | .227 | 81.7 | 87.3 | 78.8 | 8.5 |
| 4 | .909 | .005 | .791 | .214 | 79.7 | 85.4 | 76.8 | 8.6 |
| 5 | .917 | .012 | .799 | .213 | 77.9 | 84.5 | 75.0 | 9.5 |
| 6 | .926 | .026 | .798 | .228 | 75.5 | 82.5 | 72.5 | 10.0 |
| 7 | .947 | .019 | .818 | .231 | 73.7 | 80.8 | 70.4 | 10.4 |
| 8 | .965 | .065 | .838 | .227 | 72.3 | 79.8 | 69.4 | 10.4 |
| 9 | .974 | .071 | .842 | .229 | 71.4 | 79.0 | 68.3 | 10.7 |
| 10 | .980 | .079 | .842 | .237 | 70.6 | 78.0 | 67.3 | 10.7 |
| 11 | .973 | .082 | .839 | .243 | 69.8 | 77.6 | 66.9 | 10.7 |

The Mean height of the Barometer, as likewise the Mean Dry and Wet Bulb Thermometers are derived from the observations made at the several hours during the month.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of November, 1857.*

Hourly Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon. (Continued.)

| Hour. | Mean Wet Bulb Ther- mometer. | Dry Bulb above Wet. | Computed Dew Point. | Dry Bulb above Dew Point. | Mean Elastic Force of Vapour. | Mean Weight of Va- pour in a cubic foot of Air. | Additional Weight of Vapour required for complete satu- ration. | Mean degree of Hu- midity, complete saturation being unity. |
|----------------|---------------------------------|---------------------|---------------------|------------------------------|----------------------------------|---|--|--|
| | o | o | o | o | Inches. | T. gr. | T. gr. | |
| Mid- night. | 65.1 | 4.1 | 63.0 | 6.2 | 0.578 | 6.37 | 1.44 | 0.82 |
| 1 | 64.7 | 3.8 | 62.8 | 5.7 | .574 | .33 | .32 | .83 |
| 2 | 64.3 | 3.7 | 62.1 | 5.9 | .561 | .19 | .34 | .82 |
| 3 | 64.0 | 3.3 | 62.0 | 5.3 | .559 | .19 | .18 | .84 |
| 4 | 63.5 | 3.3 | 61.5 | 5.3 | .550 | .10 | .16 | .84 |
| 5 | 63.0 | 3.4 | 61.0 | 5.4 | .541 | .00 | .17 | .84 |
| 6 | 62.5 | 3.3 | 60.5 | 5.3 | .532 | 5.91 | .13 | .84 |
| 7 | 62.7 | 3.3 | 60.7 | 5.3 | .536 | .94 | .14 | .84 |
| 8 | 64.5 | 5.2 | 61.9 | 7.8 | .557 | 6.13 | .80 | .77 |
| 9 | 65.9 | 7.2 | 62.3 | 10.8 | .565 | .17 | 2.62 | .70 |
| 10 | 66.9 | 8.9 | 62.4 | 13.4 | .567 | .17 | 3.37 | .65 |
| 11 | 67.4 | 10.9 | 61.9 | 16.4 | .557 | .03 | 4.25 | .59 |
| Noon. | 67.8 | 12.4 | 61.6 | 18.6 | .552 | 5.94 | .94 | .55 |
| 1 | 68.1 | 13.2 | 61.5 | 19.8 | .550 | .91 | 5.33 | .53 |
| 2 | 68.2 | 13.7 | 61.3 | 20.6 | .546 | .86 | .58 | .51 |
| 3 | 68.1 | 13.6 | 61.3 | 20.4 | .546 | .88 | .49 | .52 |
| 4 | 67.5 | 12.2 | 61.4 | 18.3 | .548 | .92 | 4.80 | .55 |
| 5 | 68.1 | 9.8 | 63.2 | 14.7 | .582 | 6.30 | 3.86 | .62 |
| 6 | 68.2 | 7.3 | 64.5 | 11.0 | .607 | .61 | 2.85 | .70 |
| 7 | 67.5 | 6.2 | 64.4 | 9.3 | .605 | .62 | .34 | .74 |
| 8 | 66.8 | 5.5 | 64.0 | 8.3 | .597 | .54 | .04 | .76 |
| 9 | 66.3 | 5.1 | 63.7 | 7.7 | .591 | .44 | 1.91 | .77 |
| 10 | 65.9 | 4.7 | 63.5 | 7.1 | .588 | .46 | .69 | .79 |
| 11 | 65.3 | 4.5 | 63.0 | 6.8 | .578 | .36 | .59 | .80 |

All the Hygrometrical elements are computed by the Greenwich constants.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of November, 1857.*

Solar Radiation, Weather, &c.

| Date. | Max. Solar radiation. | Rain Gauge 5 feet above Ground. | Prevailing direction of the Wind. | General Aspect of the Sky. |
|-------|-----------------------|---------------------------------|-----------------------------------|---|
| | o | Inches. | | |
| 1 | <i>Sunday.</i> | | | |
| 2 | 140.0 | .. | W. & S. W. & N. E. | Cloudless till Noon, Scatd. ☽ till 4 P. M. Scatd. ☾ afterwards. |
| 3 | 138.0 | .. | N. W. & W. | Scatd. ☾ till 5 P. M. cloudless afterwards. |
| 4 | 133.0 | .. | N. W. | Cloudless till 11 A. M. Scatd. ☾ till 5 P. M. cloudless afterwards. |
| 5 | 134.2 | .. | N. W. & N. | Cloudless. |
| 6 | 137.0 | .. | N. & W. & N. W. | Cloudless. |
| 7 | 132.5 | .. | N. W. & W. | Cloudless. |
| 8 | <i>Sunday.</i> | | | |
| 9 | 129.3 | .. | N. W. & W. & calm. | Cloudless. |
| 10 | 139.0 | .. | S. W. & calm. | Cloudless. |
| 11 | 132.0 | .. | W. & calm. | Cloudless. |
| 12 | 135.0 | .. | N. W. & S. W. | Cloudless. |
| 13 | 131.5 | .. | N. W. & N. | Cloudless. |
| 14 | 133.5 | .. | N. W. & N. | Cloudless till 1 A. M. Scatd. ☽ till 3 P. M. cloudless afterwards. |
| 15 | <i>Sunday.</i> | | | |
| 16 | 133.5 | .. | N. W. & N. | Cloudless. |
| 17 | 130.0 | .. | N. W. | Cloudless. |
| 18 | 134.0 | .. | N. W. & N. | Cloudless. |
| 19 | 132.0 | .. | N. W. & N. E. | Cloudless till 8 A. M. Scatd. ☾ afterwards. |
| 20 | 134.0 | .. | N. W. & N. | Cloudless. |
| 21 | 129.0 | .. | N. & E. | Cloudless till 8 A. M. Scatd. ☾ afterwards. |
| 22 | <i>Sunday.</i> | | | |
| 23 | 132.0 | .. | N. E. & N. W. | Cloudless. |
| 24 | 130.0 | .. | N. | Cloudless. |
| 25 | 129.0 | .. | N. & N. W. | Cloudless. |
| 26 | 135.0 | .. | N. E. & E. & N. W. | Cloudless. |
| 27 | 135.0 | .. | E. & N. E. | Scatd. ☾ till 11 A. M. cloudy afterwards. Also very slightly drizzling occasionally. |
| 28 | 130.0 | .. | N. | Cloudy with very slight drizzling till 1 A. M. cloudless till 6 A. M. cloudy till 5 P. M. cloudless afterwards. |
| 29 | <i>Sunday.</i> | | | |
| 30 | 125.0 | .. | W. & N. W. | Scatd. ☾ till 4 A. M. cloudless afterwards. |

☽ Cirri, ☾ Cirro strati, ☽ Cumuli, ☽ Cumulo strati, ☾ Nimbi, — Strati,
☾ Cirro cumuli.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of November, 1857.*

MONTHLY RESULTS.

| | | | Inches. |
|--|----|----|---------|
| Mean height of the Barometer for the month, | .. | .. | 29.963 |
| Max. height of the Barometer occurred at 9 A. M. on the 16th, | .. | .. | 30.145 |
| Min. height of the Barometer occurred at 3 & 4 P. M. on the 6th, | .. | .. | 29.791 |
| <i>Extreme</i> range of the Barometer during the month, | .. | .. | 0.354 |
| Mean of the Daily Max. Pressures, | .. | .. | 30.039 |
| Ditto ditto Min. ditto, | .. | .. | 29.905 |
| <i>Mean</i> Daily range of the Barometer during the month, | .. | .. | 0.134 |

| | | | ° |
|--|----|----|------|
| Mean Dry Bulb Thermometer for the month, | .. | .. | 73.0 |
| Max. Temperature occurred at 2 P. M. on the 2nd, | .. | .. | 87.5 |
| Min. Temperature occurred at 6 A. M. on the 20th, | .. | .. | 61.0 |
| <i>Extreme</i> range of the Temperature during the month, | .. | .. | 26.5 |
| Mean of the Daily Max. Temperature, | .. | .. | 82.0 |
| Ditto ditto Min. ditto, | .. | .. | 65.7 |
| <i>Mean</i> Daily range of the Temperature during the month, | .. | .. | 16.3 |

| | | | ° |
|---|----|----|---------|
| Mean Wet Bulb Thermometer for the month, | .. | .. | 65.9 |
| Mean Dry Bulb Thermometer above Mean Wet Bulb Thermometer, .. | | | 7.1 |
| Computed Mean Dew-point for the month, .. | .. | .. | 62.3 |
| Mean Dry Bulb Thermometer above computed mean Dew-point, | .. | .. | 10.7 |
| | | | Inches. |
| Mean Elastic force of Vapour for the month, | .. | .. | 0.565 |

| | | | Troy grains. |
|---|----|----|--------------|
| Mean Weight of Vapour for the month, .. | .. | .. | 6.17 |
| Additional Weight of Vapour required for complete saturation, .. | .. | .. | 2.59 |
| Mean degree of humidity for the month, complete saturation being unity, | | | 0.70 |

| | | | Inches. |
|--|----|----|------------|
| Drizzled 2 days, Max. fall of rain during 24 hours, .. | .. | .. | Nil. |
| Total amount of rain during the month, .. | .. | .. | Nil. |
| Prevailing direction of the Wind, .. | .. | .. | N. W. & N. |

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of November, 1857.*

MONTHLY RESULTS.

Table showing the number of days on which at a given hour any particular wind
blew, together with the number of days on which at the same hour when
any particular wind was blowing it rained.

| Hour. | N. | Rain on. N. | E. | Rain on. E. | S. | Rain on. S. | W. | Rain on. W. | N.W. | Rain on. N.W. | Calm. | Rain on. Calm. | Missed. |
|-----------|--------------|----------------|----|----------------|----|----------------|----|----------------|------|------------------|-------|-------------------|---------|
| | No. of days. | | | | | | | | | | | | |
| Midnight. | 6 | 2 | 2 | 1 | | | 2 | 2 | 8 | 3 | | | |
| 1 | 7 | 2 | 1 | | | | 2 | 2 | 8 | 3 | | | |
| 2 | 7 | 1 | 1 | | | | 1 | 3 | 8 | 4 | | | |
| 3 | 7 | 1 | 1 | 1 | | | 1 | 3 | 7 | 4 | | | 1 |
| 4 | 8 | 2 | 1 | | | | 1 | 3 | 7 | 3 | | | |
| 5 | 5 | 2 | 1 | | | | 1 | 3 | 8 | 3 | | | 2 |
| 6 | 8 | 1 | 1 | 1 | | | 3 | 2 | 9 | 1 | | | |
| 7 | 8 | 2 | 1 | | | | 2 | 1 | 10 | 1 | | | |
| 8 | 9 | | 2 | | | | | 3 | 11 | | | | |
| 9 | 7 | 2 | | | | | 1 | 4 | 11 | | | | |
| 10 | 5 | 4 | 1 | | | | | 4 | 11 | | | | |
| 11 | 5 | 3 | | | | | | 5 | 12 | | | | |
| Noon. | 5 | 4 | | | | | | 3 | 13 | | | | |
| 1 | 4 | 5 | 1 | | | | 1 | 2 | 12 | | | | |
| 2 | 6 | 2 | 1 | | | | 1 | 2 | 13 | | | | |
| 3 | 3 | | 2 | | | | 2 | 3 | 15 | | | | |
| 4 | 5 | 1 | 1 | | | | 3 | 3 | 12 | | | | |
| 5 | 5 | 1 | 1 | 1 | 1 | | 1 | 5 | 11 | | | | |
| 6 | 6 | | 2 | | | | 1 | 4 | 11 | | | | |
| 7 | 6 | 1 | 3 | | | | 1 | 4 | 10 | | | | |
| 8 | 5 | 1 | 3 | 1 | 1 | | 1 | 4 | 10 | | | | |
| 9 | 6 | 1 | 3 | 1 | 1 | | 1 | 5 | 8 | | | | |
| 10 | 6 | 1 | 3 | | 1 | | 1 | 4 | 7 | | | | |
| 11 | 6 | 1 | 3 | | 1 | | 1 | 5 | 8 | | | | 2 |

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of November, 1857.*

On the 17th November, 1857, the Meteorological Observations after ten minutes intervals being taken at the Surveyor General's Office, they indicate the following circumstances :—

| | | | |
|---|---|--|--|
| <i>Exact Time of Minimum Barometer,</i> | { | h.m. h.m. | |
| | | A. M. Between 2-30 & 3-20 during the whole of which interval the Barometer was stationary. | |
| | | h. m. | |
| | { | P. M. 4-0. | |
| Ditto of Maximum Barometer,..... | { | h. m. | |
| | | A. M. 9-30. h. m. h. m. | |
| | | P. M. Between 10-30. & 11-0 during the whole of which interval the Barometer was stationary. | |
| Ditto of Minimum Temperature,... | { | h. m. h. m. | |
| | | A. M. Between 6-30 & 7-0 during the whole of which interval the Thermometer was stationary. | |
| Ditto of Maximum Temperature,... | { | h. m. h. m. | |
| | | P. M. Between 2-20 and 2-30 during the whole of which interval the Thermometer was stationary. | |

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of December, 1857.*

Latitude 22° 33' 1" North. Longitude 88° 20' 34" East.

Feet.

Height of the Cistern of the Standard Barometer above the Sea level, 18.11

Daily Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

| Date. | Mean Height of the Barometer at 32° Fahr. | Range of the Barometer during the day. | | | Mean Dry Bulb Thermometer. | Range of the Tempera- ture during the day. | | |
|-------|---|---|---------|---------|-------------------------------|---|------|-------|
| | | Max. | Min. | Diff. | | Max. | Min. | Diff. |
| | Inches. | Inches. | Inches. | Inches. | o | o | o | o |
| 1 | 30.022 | 30.096 | 29.975 | 0.121 | 70.5 | 77.8 | 65.0 | 12.8 |
| 2 | .041 | .125 | .990 | .135 | 69.8 | 77.9 | 63.6 | 14.3 |
| 3 | .053 | .137 | 30.000 | .137 | 68.9 | 78.7 | 61.2 | 17.5 |
| 4 | .084 | .156 | .033 | .123 | 68.4 | 78.4 | 61.2 | 17.2 |
| 5 | .078 | .167 | .000 | .167 | 68.8 | 78.6 | 61.4 | 17.2 |
| 6 | <i>Sunday.</i> | | | | | | | |
| 7 | 29.981 | .049 | 29.921 | .128 | 67.5 | 77.8 | 61.0 | 16.8 |
| 8 | .987 | .065 | .931 | .134 | 68.1 | 78.3 | 61.6 | 16.7 |
| 9 | 30.030 | .102 | .969 | .133 | 67.7 | 78.2 | 58.0 | 20.2 |
| 10 | .052 | .127 | 30.002 | .125 | 68.4 | 79.6 | 59.6 | 20.0 |
| 11 | .060 | .138 | .001 | .137 | 67.3 | 78.6 | 58.9 | 19.7 |
| 12 | .056 | .160 | 29.988 | .172 | 65.6 | 76.6 | 57.2 | 19.4 |
| 13 | <i>Sunday.</i> | | | | | | | |
| 14 | .002 | .081 | .941 | .140 | 66.2 | 77.4 | 57.6 | 19.8 |
| 15 | .004 | .074 | .936 | .138 | 65.9 | 77.6 | 56.8 | 20.8 |
| 16 | 29.992 | .068 | .917 | .151 | 65.8 | 76.8 | 56.2 | 20.6 |
| 17 | 30.028 | .092 | .965 | .127 | 67.1 | 76.8 | 59.6 | 17.2 |
| 18 | .053 | .125 | .990 | .135 | 67.3 | 77.2 | 59.4 | 17.8 |
| 19 | .035 | .127 | .972 | .155 | 67.1 | 77.6 | 58.8 | 18.8 |
| 20 | <i>Sunday.</i> | | | | | | | |
| 21 | .017 | .103 | .963 | .140 | 67.3 | 77.9 | 59.1 | 18.8 |
| 22 | .020 | .105 | .961 | .144 | 67.1 | 76.8 | 59.5 | 17.3 |
| 23 | .000 | .088 | .943 | .145 | 66.7 | 76.2 | 58.4 | 17.8 |
| 24 | .006 | .088 | .952 | .136 | 66.9 | 76.8 | 59.2 | 17.6 |
| 25 | .059 | .140 | 30.011 | .129 | 67.0 | 78.2 | 57.8 | 20.4 |
| 26 | .070 | .153 | .008 | .145 | 66.2 | 76.3 | 58.2 | 18.1 |
| 27 | <i>Sunday.</i> | | | | | | | |
| 28 | .080 | .164 | .021 | .143 | 65.1 | 75.4 | 55.9 | 19.5 |
| 29 | .103 | .172 | .043 | .129 | 66.3 | 76.5 | 57.6 | 18.9 |
| 30 | .079 | .158 | 29.992 | .166 | 68.2 | 78.0 | 60.7 | 17.3 |
| 31 | .103 | .191 | 30.039 | .152 | 68.3 | 77.5 | 61.6 | 15.9 |

The Mean height of the Barometer, as likewise the Mean Dry and Wet Bulb Thermometers are derived, from the twenty-four hourly observations made, during the day.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of December, 1857.*

Daily Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon. (Continued.)

| Date. | Mean Wet Bulb Ther- mometer. | Dry Bulb above Wet. | Computed Dew Point. | Dry Bulb above Dew Point. | Mean Elastic force of Vapour. | Mean Weight of Vapour in a cubic foot of air. | Additional Weight of Va- pour required for com- plete saturation. | Mean degree of Humi- dity, complete satura- tion being unity. |
|-------|---------------------------------|---------------------|---------------------|------------------------------|----------------------------------|--|---|---|
| | o | o | o | o | Inches. | T. gr. | T. gr. | |
| 1 | 65.3 | 5.2 | 62.7 | 7.8 | 0.572 | 6.29 | 1.84 | 0.77 |
| 2 | 63.5 | 6.3 | 60.3 | 9.5 | .528 | 5.81 | 2.14 | .73 |
| 3 | 62.6 | 6.3 | 59.4 | 9.5 | .513 | .64 | .10 | .73 |
| 4 | 61.5 | 6.9 | 57.4 | 11.0 | .480 | .29 | .33 | .69 |
| 5 | 61.4 | 7.4 | 57.7 | 11.1 | .485 | .34 | .37 | .69 |
| 6 | <i>Sunday.</i> | | | | | | | |
| 7 | 61.2 | 6.3 | 57.4 | 10.1 | .480 | .30 | .12 | .71 |
| 8 | 61.2 | 6.9 | 57.1 | 11.0 | .475 | .24 | .31 | .69 |
| 9 | 60.1 | 7.6 | 55.5 | 12.2 | .450 | 4.98 | .48 | .67 |
| 10 | 60.5 | 7.9 | 55.8 | 12.6 | .455 | 5.02 | .60 | .66 |
| 11 | 60.0 | 7.3 | 55.6 | 11.7 | .452 | .00 | .37 | .68 |
| 12 | 58.7 | 6.9 | 54.6 | 11.0 | .437 | 4.85 | .15 | .69 |
| 13 | <i>Sunday.</i> | | | | | | | |
| 14 | 60.0 | 6.2 | 56.3 | 9.9 | .462 | 5.13 | 1.99 | .72 |
| 15 | 59.2 | 6.7 | 55.2 | 10.7 | .445 | 4.94 | 2.12 | .70 |
| 16 | 59.4 | 6.4 | 55.6 | 10.2 | .452 | 5.02 | .02 | .71 |
| 17 | 61.4 | 5.7 | 58.0 | 9.1 | .489 | .41 | 1.91 | .74 |
| 18 | 61.7 | 5.6 | 58.3 | 9.0 | .494 | .46 | .91 | .74 |
| 19 | 61.6 | 5.5 | 58.3 | 8.8 | .494 | .46 | .86 | .75 |
| 20 | <i>Sunday.</i> | | | | | | | |
| 21 | 61.5 | 5.8 | 58.0 | 9.3 | .489 | .41 | .96 | .73 |
| 22 | 60.9 | 6.2 | 57.2 | 9.9 | .476 | .26 | 2.06 | .72 |
| 23 | 60.6 | 6.1 | 56.9 | 9.8 | .472 | .21 | .02 | .72 |
| 24 | 60.8 | 6.1 | 57.1 | 9.8 | .475 | .25 | .03 | .72 |
| 25 | 60.5 | 6.5 | 56.6 | 10.4 | .467 | .17 | .13 | .71 |
| 26 | 60.1 | 6.1 | 56.4 | 9.8 | .464 | .14 | 1.98 | .72 |
| 27 | <i>Sunday.</i> | | | | | | | |
| 28 | 59.1 | 6.0 | 55.5 | 9.6 | .450 | .00 | .89 | .73 |
| 29 | 60.9 | 5.4 | 57.7 | 8.6 | .485 | .36 | .79 | .75 |
| 30 | 62.2 | 6.0 | 58.6 | 9.6 | .499 | .51 | 2.07 | .73 |
| 31 | 62.8 | 5.5 | 59.5 | 8.8 | .515 | .68 | 1.92 | .75 |

All the Hygrometrical elements are computed by the Greenwich Constants.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of December, 1857.*

Hourly Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

| Hour. | Mean Height of the Barometer at 32° Fahr. | Range of the Barometer for each hour during the month. | | | Mean Dry Bulb Thermometer. | Range of the Temperature for each hour during the month. | | |
|----------------|---|--|---------|---------|-------------------------------|--|------|-------|
| | | Max. | Min. | Diff. | | Max. | Min. | Diff. |
| | Inches. | Inches. | Inches. | Inches. | o | o | o | o |
| Mid- night. | 30.044 | 30.113 | 29.975 | 0.138 | 63.3 | 67.8 | 60.2 | 7.6 |
| 1 | .035 | .105 | .967 | .138 | 62.7 | 66.5 | 59.2 | 7.3 |
| 2 | .025 | .095 | .962 | .133 | 62.1 | 66.2 | 58.7 | 7.5 |
| 3 | .014 | .086 | .950 | .136 | 61.5 | 66.1 | 57.8 | 8.3 |
| 4 | .013 | .086 | .947 | .139 | 60.7 | 65.8 | 57.1 | 8.7 |
| 5 | .025 | .098 | .960 | .138 | 60.3 | 65.5 | 56.4 | 9.1 |
| 6 | .042 | .112 | .982 | .130 | 59.7 | 65.1 | 56.2 | 8.9 |
| 7 | .066 | .133 | 30.007 | .126 | 59.5 | 65.0 | 55.9 | 9.1 |
| 8 | .097 | .179 | .034 | .145 | 62.2 | 67.8 | 57.8 | 10.0 |
| 9 | .119 | .189 | .049 | .140 | 66.0 | 70.0 | 62.4 | 7.6 |
| 10 | .117 | .191 | .046 | .145 | 69.3 | 73.0 | 66.6 | 6.4 |
| 11 | .098 | .173 | .028 | .145 | 72.6 | 75.0 | 69.9 | 5.1 |
| Noon. | .064 | .132 | .001 | .131 | 75.2 | 76.9 | 72.8 | 4.1 |
| 1 | .029 | .097 | 29.963 | .134 | 76.6 | 78.6 | 74.6 | 4.0 |
| 2 | .002 | .068 | .932 | .136 | 77.5 | 79.6 | 75.4 | 4.2 |
| 3 | 29.986 | .048 | .922 | .126 | 76.9 | 78.6 | 75.0 | 3.6 |
| 4 | .982 | .039 | .917 | .122 | 75.1 | 77.0 | 73.0 | 4.0 |
| 5 | .930 | .053 | .925 | .128 | 73.1 | 75.2 | 71.4 | 3.8 |
| 6 | 30.000 | .065 | .937 | .128 | 70.4 | 72.8 | 68.6 | 4.2 |
| 7 | .020 | .086 | .958 | .128 | 68.6 | 71.2 | 66.4 | 4.8 |
| 8 | .038 | .110 | .971 | .133 | 67.2 | 70.4 | 65.0 | 5.4 |
| 9 | .052 | .124 | .985 | .139 | 66.1 | 69.6 | 63.6 | 6.0 |
| 10 | .061 | .127 | .987 | .140 | 65.1 | 68.8 | 62.4 | 6.4 |
| 11 | .056 | .123 | .980 | .143 | 64.2 | 68.2 | 61.4 | 6.8 |

The Mean Height of the Barometer, as likewise the Mean Dry and Wet Bulb Thermometers are derived from the observations made at the several hours during the month.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of December, 1857.*

Hourly Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.—(Continued.)

| Hour. | Mean Wet Bulb Thermometer. | Dry Bulb above Wet. | Computed Dew point. | Dry Bulb above Dew point. | Mean elastic force of Vapour. | Mean Weight of Va- pour in a Cubic foot of Air. | Additional weight of vapour required for complete saturation. | Mean degree of hu- midity, complete satu- ration being unity. |
|----------------|-------------------------------|---------------------|---------------------|------------------------------|----------------------------------|---|---|---|
| | o | o | o | o | Inches. | Troy grs. | Troy grs. | |
| Mid- night. | 59.4 | 3.9 | 56.7 | 6.6 | .469 | 5.22 | 1.29 | 0.80 |
| 1 | 59.0 | 3.7 | 56.4 | 6.3 | .464 | .18 | .21 | .81 |
| 2 | 58.5 | 3.6 | 56.0 | 6.1 | .458 | .12 | .15 | .82 |
| 3 | 58.1 | 3.4 | 55.7 | 5.8 | .453 | .07 | .09 | .82 |
| 4 | 57.3 | 3.4 | 54.6 | 6.1 | .437 | 4.90 | .10 | .82 |
| 5 | 57.1 | 3.2 | 54.5 | 5.8 | .435 | .88 | .05 | .82 |
| 6 | 56.8 | 2.9 | 54.5 | 5.2 | .435 | .89 | 0.93 | .84 |
| 7 | 56.7 | 2.8 | 54.5 | 5.0 | .435 | .89 | .89 | .85 |
| 8 | 58.6 | 3.6 | 56.1 | 6.1 | .459 | 5.14 | 1.15 | .82 |
| 9 | 60.5 | 5.5 | 57.2 | 8.8 | .476 | .27 | .81 | .74 |
| 10 | 62.2 | 7.1 | 58.6 | 10.7 | .499 | .50 | 2.33 | .70 |
| 11 | 63.6 | 9.0 | 59.1 | 13.5 | .508 | .55 | 3.11 | .64 |
| Noon. | 64.3 | 10.9 | 58.8 | 16.4 | .503 | .47 | .90 | .58 |
| 1 | 64.7 | 11.9 | 58.7 | 17.9 | .501 | .44 | 4.33 | .56 |
| 2 | 64.9 | 12.6 | 58.6 | 18.9 | .499 | .41 | .63 | .54 |
| 3 | 64.1 | 12.8 | 57.7 | 19.2 | .485 | .25 | .61 | .53 |
| 4 | 63.5 | 11.6 | 57.7 | 17.4 | .485 | .27 | .07 | .56 |
| 5 | 63.8 | 9.3 | 59.1 | 14.0 | .508 | .55 | 3.24 | .63 |
| 6 | 63.8 | 6.6 | 60.5 | 9.9 | .532 | .85 | 2.25 | .72 |
| 7 | 63.0 | 5.6 | 60.2 | 8.4 | .527 | .82 | 1.85 | .76 |
| 8 | 62.2 | 5.0 | 59.2 | 8.0 | .509 | .64 | .71 | .77 |
| 9 | 61.5 | 4.6 | 58.7 | 7.4 | .501 | .56 | .54 | .78 |
| 10 | 61.0 | 4.1 | 58.5 | 6.6 | .498 | .52 | .37 | .80 |
| 11 | 60.3 | 3.9 | 57.6 | 6.6 | .483 | .36 | .33 | .80 |

All the Hygrometrical elements are computed by the Greenwich constants.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of December, 1857.*

Solar Radiation, Weather, &c.

| Date. | Max. Solar radiation. | Rain Gauge 5 feet above Ground. | Prevailing direction of the Wind. | General Aspect of the Sky. |
|-------|-----------------------|---------------------------------|-----------------------------------|--|
| | ° | Inches. | | |
| 1 | 126.4 | .. | N. W. & N. | Scatd. ☾i till 5 A. M. cloudless till 9 A. M. Scatd. ☾i till 4 P. M. cloudless afterwards. |
| 2 | 127.0 | .. | N. W. & N. [Calm. | Cloudless. |
| 3 | 131.0 | .. | N. W. & N. E. & | Cloudless. |
| 4 | 130.0 | .. | N. W. & N. | Cloudless. Also foggy between Mid- night and 3 A. M. |
| 5 | 132.0 | .. | N. W. | Cloudless. |
| 6 | <i>Sunday.</i> | | | |
| 7 | 131.0 | .. | N. W. & N. | Cloudless. |
| 8 | 128.0 | .. | N. W. & N. | Cloudless. |
| 9 | 128.0 | .. | N. W. & N. | Cloudless. |
| 10 | 137.0 | .. | N. & N. W. | Cloudless. |
| 11 | 133.0 | .. | N. W. & N. | Cloudless. [7 P. M. and 11 P. M. |
| 12 | 136.0 | .. | N. & N. W. | Cloudless, also slightly foggy between |
| 13 | <i>Sunday.</i> | | | |
| 14 | 131.0 | .. | S. W. & W. & N. | Cloudless, also slightly foggy between 8 P. M. and 11 P. M. |
| 15 | 128.0 | .. | W. & S. W. & S. | Cloudless, also foggy between Midnight and 8 A. M. [P. M. |
| 16 | 133.5 | .. | S. E. & S. W. & E. | Cloudless; also foggy between 9 and 11 |
| 17 | 130.2 | .. | N. E. & W. | Cloudless, also foggy between 8 and 11 P. M. |
| 18 | 131.4 | .. | N. | Cloudless. |
| 19 | 128.0 | .. | N. W. & N. | Cloudless. |
| 20 | <i>Sunday.</i> | | | |
| 21 | 128.0 | .. | N. W. & N. | Cloudless. |
| 22 | 132.4 | .. | N. W. | Cloudless. Also foggy between 7 and 10 P. M. [7 and 10 P. M. |
| 23 | 128.4 | .. | N. E. & W. & N. W. | Cloudless. Also slightly foggy between |
| 24 | 130.0 | .. | W. & N. W. | Cloudless. [and Midnight. |
| 25 | 132.0 | .. | N. W. & N. | Cloudless. Also foggy between 7 P. M. |
| 26 | 128.0 | .. | N. & W. | Cloudless. Also foggy between 8 P. M. and Midnight. |
| 27 | <i>Sunday.</i> | | | |
| 28 | 129.0 | .. | N. W. & N. E. | Cloudless. Also slightly foggy between Midnight and 2 A. M. |
| 29 | 126.0 | .. | W. & N. | Cloudless till 6 A. M. Scatd. ☾i till 9 A. M. cloudless till 7 P. M. Scatd. ☾i afterwards. [wards. |
| 30 | 127.0 | .. | W. & N. & N. W. | Cloudless till 3 P. M. Scatd. ☾i after- |
| 31 | 128.0 | .. | N. W. & N. | Cloudless till 1 P. M. cloudy till 6 P. M. Scatd. ☾i afterwards. |

☾i Cirri, ☾i cirro strati, ☾i cumuli, ☾i cumulo strati, ☾i nimbi, —i strati
☾i cirro cumuli.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of December, 1857.*

MONTHLY RESULTS.

| | | | Inches. |
|---|----|----|---------|
| Mean height of the Barometer for the month, | .. | .. | 30.041 |
| Max. height of the Barometer, occurred at 10 A. M. on the 31st, | .. | .. | 30.191 |
| Min. height of the Barometer, occurred at 4 P. M. on the 16th, | .. | .. | 29.917 |
| <i>Extreme Range</i> of the Barometer during the month, | .. | .. | 0.274 |
| Mean of the Daily Max. Pressures, | .. | .. | 30.120 |
| Ditto ditto Min. ditto, | .. | .. | 29.980 |
| <i>Mean Daily range</i> of the Barometer during the month, | .. | .. | 0.140 |

| | | | ° |
|--|----|----|------|
| Mean Dry Bulb Thermometer for the month, | .. | .. | 67.4 |
| Max. Temperature, occurred at 2 P. M. on the 10th, | .. | .. | 79.6 |
| Min. Temperature, occurred at 7 A. M. on the 28th, | .. | .. | 55.9 |
| <i>Extreme Range</i> of the Temperature during the month, | .. | .. | 23.7 |
| Mean of the Daily Max. Temperatures, | .. | .. | 77.5 |
| Ditto ditto Min. ditto, | .. | .. | 59.4 |
| <i>Mean Daily range</i> of the Temperature during the month, | .. | .. | 18.1 |

| | | | ° |
|--|----|----|------------------|
| Mean Wet Bulb Thermometer for the month, | .. | .. | 61.1 |
| Mean Dry Bulb Thermometer above Mean Wet Bulb Thermometer, | .. | .. | 6.3 |
| Computed Mean Dew Point for the month, | .. | .. | 57.3 |
| Mean Dry Bulb Thermometer above computed Mean Dew Point, | .. | .. | 10.1 |
| Mean Elastic force of vapour for the month, | .. | .. | Inches. 0.478 |

| | | | Troy grains. |
|---|----|----|--------------|
| Mean weight of vapour for the month, | .. | .. | 5.28 |
| Additional weight of vapour required for complete saturation, | .. | .. | 2.11 |
| Mean degree of Humidity for the month, complete saturation being unity, | .. | .. | 0.71 |

| | | | Inches. |
|--|----|----|------------|
| Rained No days. Max. fall of rain during 24 hours, | .. | .. | Nil. |
| Total amount of rain during the month, | .. | .. | Nil |
| Prevailing direction of the Wind, | .. | .. | N. W. & N. |

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of December, 1857.*

MONTHLY RESULTS.

Table showing the number of days on which at a given hour any particular wind
blew, together with the number of days on which at the same hour,
when any particular wind was blowing it rained.

| Hour. | N. | Rain on. N. E. | Rain on. E. | Rain on. S. E. | Rain on. S. | Rain on. S. W. | Rain on. W. | Rain on. N. W. | Rain on. Calm. | Rain on. | Missed. |
|-----------|--------------|-------------------|----------------|-------------------|----------------|-------------------|----------------|-------------------|-------------------|----------|---------|
| | No. of days. | | | | | | | | | | |
| Midnight. | 4 | 1 | | | | | | | | | |
| 1 | 5 | 2 | | | | 1 | 6 | 11 | 3 | | 1 |
| 2 | 5 | 2 | | | | 1 | 3 | 14 | 1 | | |
| 3 | 5 | 2 | | | 1 | 1 | 2 | 14 | 1 | | 1 |
| 4 | 6 | 2 | | | 1 | 1 | 3 | 13 | | | 1 |
| 5 | 6 | 1 | | | 1 | 2 | 3 | 13 | | | 1 |
| 6 | 6 | 3 | | | 2 | 1 | 3 | 12 | | | 1 |
| 7 | 6 | 3 | | | 2 | 1 | 1 | 14 | | | |
| 8 | 8 | 1 | 1 | | | 2 | 3 | 11 | | | 1 |
| 9 | 7 | 4 | 2 | | | 2 | 3 | 9 | | | |
| 10 | 6 | 4 | 4 | | | 2 | 2 | 9 | | | |
| 11 | 8 | 4 | 2 | | 1 | 1 | 1 | 10 | | | |
| Noon. | 6 | 4 | 2 | | 1 | 1 | 3 | 10 | | | |
| 1 | 5 | 3 | 2 | | | 2 | 4 | 11 | | | |
| 2 | 4 | 3 | 1 | | | 4 | 4 | 11 | | | |
| 3 | 5 | 3 | 1 | | | 4 | 4 | 10 | | | |
| 4 | 8 | 1 | 1 | | | 1 | 8 | 8 | | | |
| 5 | 7 | 2 | 1 | 1 | | 2 | 5 | 9 | | | |
| 6 | 9 | 1 | | 1 | | 1 | 4 | 10 | 1 | | |
| 7 | 9 | 1 | | 1 | | 1 | 5 | 8 | 2 | | |
| 8 | 8 | 1 | | 1 | | 1 | 4 | 8 | 4 | | |
| 9 | 7 | 1 | | 1 | | 1 | 4 | 8 | 5 | | |
| 10 | 7 | | | 1 | | 1 | 5 | 8 | 4 | | 1 |
| 11 | 7 | | 1 | 1 | | 1 | 6 | 8 | 3 | | |

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of December, 1857.*

On the 24th December, 1857, the Meteorological Observations after ten minutes intervals being taken at the Surveyor General's Office, they indicate the following circumstances :—

| | | | |
|---|---|--|--|
| | | h. m. | |
| <i>Exact Time of Minimum Barometer,</i> | | { A. M. 4-40. | |
| | | { P. M. 3-40. | |
| | | h. m. h. m. | |
| Ditto of Maximum Barometer, ... | { | A. M. Between 9-40. & 10-0 during | |
| | | which time the Barometer was stationary. | |
| | { | P. M. Between 9-40 & 9-50 during | |
| | | which time the Barometer was stationary. | |
| Ditto of Minimum Temperature,... | { | A. M. Between 7-10 & 7-20 during | |
| | | which time the Thermometer was stationary. | |
| Ditto of Maximum Temperature,... | { | P. M. Between 1-50 & 2-20 during | |
| | | which time the Thermometer was stationary. | |

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